YACHTING

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ANCHORAGE AND WATER FRONT OF PUNTA ARENAS ON THE STRAITS OF MAGELLAN, THE MOST SOUTHERLY TOWN IN THE WORLD

Carrying the Panama-Pacific Exposition Flag Around a Continent

Being the Full Story of the Voyage of the Little Schooner Yacht Edris From New York to San Francisco.

By CAPT. C. E. MILLE

AS the month of December, 1911, began to give warning of the approach of severe winter weather, I fitted out the shoal-draft auxiliary schooner yacht Edris, which had en recently purchased in New York by Capt. John Barneson, of n Francisco, Cal., for a voyage around South America by way the Straits of Magellan for delivery at her home port. The w owner had been formerly a master mariner, and, while now business on the Pacific Coast, his love of the sea would not per- it him to sever entirely his interest in maritime matters, which s his reason for purchasing the little vessel.

The Edris was a Cary Smith designed schooner, 84 feet long er all, 68 feet on the waterline, 19 feet 6 inches beam, and 4 et 8 inches draft—not just the type of craft one would choose r a 15,000-mile voyage around the continent of South America. e was a steel centerboard vessel, built primarily for southern uising, and had made several very fast runs between New York d Florida. At the time of purchase she was fitted with a three- linder Craig engine, which was overhauled during her fitting t, prior to sailing.

By the 13th of December I was ready to start (with the excep- n of some engine parts which could not be delivered for some days, I was told), and on the afternoon of that day I hoisted the colors of the Panama-Pacific International Exposition at the mast-head, and, with the American ensign at the peak, we put to sea with a fair N. W. wind and a smooth sea. I had intended to cross the Stream at once and make well to the south'ard and east'ard, and run the trades down, rather than coast it to Cape St. Roque, the northeastern extremity of South America, thereby avoiding a beat to windward of some 2,000 miles with a contrary current (the Equatorial Stream); but, thanks to some "sore heads" who had littered our decks before our departure with typewritten cards alleging the yacht's inability to keep afloat when she got outside, and whose motive was, no doubt, to discourage my crew from sailing on the Edris, I decided on the longer route and proceeded down the Jersey beach.

We made good time, being 29 hours to Hog Island, 20 miles north of Cape Charles; but from there we drifted and towed, with our little Atlantic power dory, to Norfolk, Va., where I besieged the express offices day and night for two weeks awaiting the manifold required to put our engine in working order. It finally arrived, and the engine was at last in working order once more.

The ship's company at this time consisted of six men besides

THE TOWN OF PUNTA ARENAS ON THE STRAITS OF MAGELLAN

A STREET IN PUNTA ARENAS

myself, their positions being engineer, cook and four seamen. It was hard to get good men to go on a trip like this, and some of those whom I picked up were nothing more nor less than beach combers, on whom I couldn't place much reliance. It was for this reason that I did not carry a mate, it being impossible to get a good man for what we could pay, and none of the men that I had would have been capable of acting in this capacity.

New Year's Day, 1912, saw us once more in motion, and we proceeded through the north branch of the Elizabeth River to the entrance of the Dismal Swamp Canal, where I paid the toll required and reduced speed to conform with the requirements. We finally reached Beaufort, N. C., without developing a leak of any kind. But canal navigation is no fair test of a vessel's seagoing qualities. On the following day, January 5, we sailed, and (with the object of trying her out) I ran the Edris into the Gulf Stream, where we encountered the heaviest sea of the run and carried away one of the boat davits, smashed the small boats and, in fact, tried her out with a vengeance; but the leak developed and the pumps (I had an extra one) kept us busy.

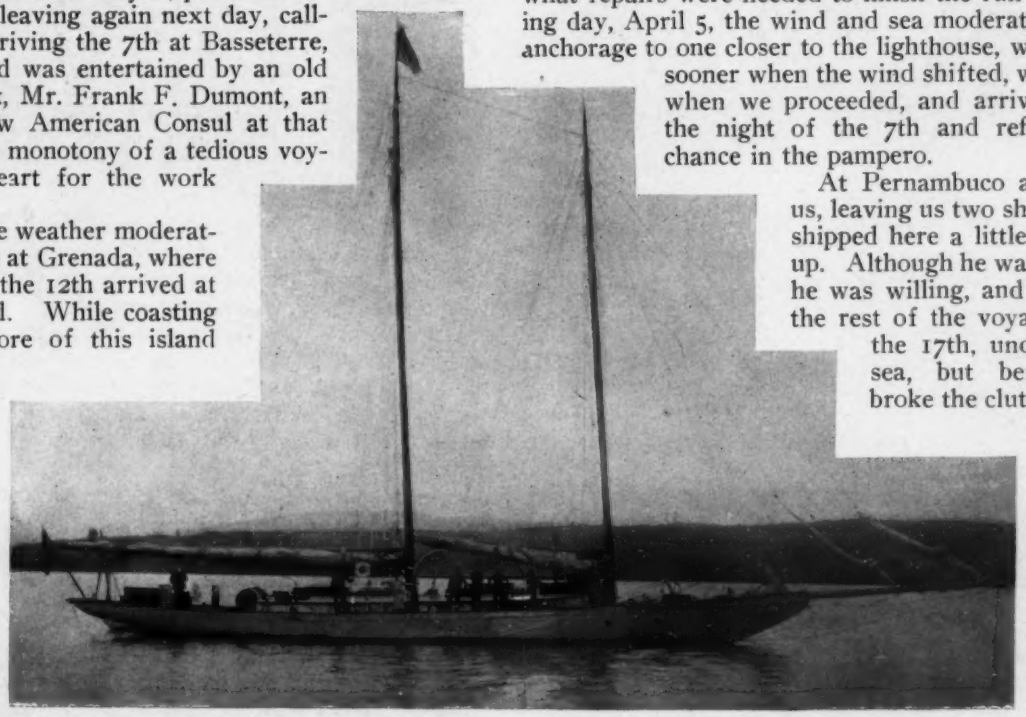
Arriving at Miami, Fla., on the 10th of January, I found I could not repair her bottom there, so proceeded on the 15th to Key West, where we arrived on the 17th. Here I had a soft patch placed where the leak was located, in the lower forward end of centerboard casing, and on the 19th we sailed, beginning our long beat to windward for Cape St. Roque. Ponce, P. R., was reached on the 30th. Sailed again on February 2; put in under the shelter of Crab Island on the 3d, leaving again next day, calling at St. Kitts, and arriving the 7th at Basseterre, where I dined with and was entertained by an old friend from New York, Mr. Frank F. Dumont, an old yachtsman and now American Consul at that island. This broke the monotony of a tedious voyage and gave more heart for the work ahead.

The following day, the weather moderating, I sailed and arrived at Grenada, where I spent a night, and on the 12th arrived at Port of Spain, Trinidad. While coasting along the southern shore of this island (from which we sailed on the 16th of February) we passed a small islet, some two miles off shore, which had the appearance of a newly plowed field, evidently of recent volcanic origin. February 20 found us at Georgetown, B. G. (Demerara), where one of the crew deserted and we were forced to sail without him. Leaving again on the 23d, we passed the N. E. end of South America, Cape St. Roque, on the 11th of March, and arrived at Pernambuco, Brazil, on the 13th, just three months from New York and the end of our long and tedious beat to windward, which might have been saved had we been able to go right off shore.

After a pleasantly spent week here, we sailed on the 20th and made a fairly good run to within 180 miles of Montevideo, where we encountered a heavy S. W. wind, called here a "pampero," which kicked up a heavy sea, though not as heavy as we had experienced on former occasions during the trip. However, it was bad enough to carry away the forestay, letting the masts drop back and slacking up the shrouds, so that the heavy roll from side to side finally split the mainmast at the heel for some four feet. Had there been an iron band around the foot of the mast, as there should have been, the spar, which was a good stick, would have stood the strain, as did the foremast. The bowsprit also broke short off at the stem as she plunged her nose into a heavy sea, and the foresail and forestaysail were torn badly. Before we could get the mess cleared up forward the fore gaff broke in two, and, to add to our troubles, the leak broke out afresh, and we again started the pumps.

In this condition I made hasty repairs and ran back some 40 miles, finding shelter under the lee of Buena Vista Hill, in Castello Bay, north of Poloneas Point Light, where we anchored and made what repairs were needed to finish the run to port. The following day, April 5, the wind and sea moderated, and I changed my anchorage to one closer to the lighthouse, where I could get away sooner when the wind shifted, which it did on the 6th, when we proceeded, and arrived at Montevideo on the night of the 7th and refitted, after our hard chance in the pampero.

At Pernambuco another man had quit us, leaving us two short of a full crew, so I shipped here a little Englishman I picked up. Although he was not much of a sailor, he was willing, and stood by me through the rest of the voyage. Leaving port on the 17th, under power, we put to sea, but before proceeding far broke the clutch of the reverse gear, which placed the engine out of commission. As there was no wind, I could neither return, if I would, nor proceed; so we lay becalmed two whole days. On the afternoon of the 19th the wind, breezing up from the N. E., I squared away, S. S. W. for



EDRIS, A HANDSOME CRAFT, BUT HARDLY THE TYPE FOR A 15-000-MILE VOYAGE AROUND TWO CONTINENTS

Cape Horn. With no engine to aid us in calms, we did not make the time I had hoped; but on May 2 we arrived off Cape Virgins, the eastern entrance to the Straits of Magellan. It was the beginning of the Southern winter, and with a heavy gale drawing through the Straits we were blown off shore and made three unsuccessful attempts to beat back, the Edris drawing only some 4 feet and not being able to work to windward in the heavy seas without her engine. It was not until two days later that we finally gained the shelter of the Cape and anchored between it and Dungeness, with main boom and bowsprit broken, sails torn and blown away, and one of our boats washed from the davits. It took us four days more to work through the Straits to Punta Arenas, where we arrived on the 8th of May, the distance from Montevideo being 1,305 miles.

Three weeks from Montevideo seems a long time, but when one considers that we had no engine to aid us and that a tugboat of 8 knots speed (called the Alidin Harvey), out from England, which left Montevideo a day or two before us, arrived but a few days sooner than we did (making the distance in practically the same time), it does not seem so long, after all. This knowledge acted as a balm to our feelings and recompensed us for our efforts, giving us more heart to meet what still lay ahead of us, of which, happily, we were as yet in ignorance.

As the season was now far advanced (I had hoped, in starting, to go through in the summer season) I deemed it prudent to take a pilot here, who might be better able to keep the Edris out of the strong current setting easterly through the Straits. So I engaged Captain Thomas Howard (with fifty years' experience in these waters), and hoped to make good time through the Straits and Smyth Channel.

After lying at Punta Arenas three weeks repairing the damage done during our three unsuccessful attempts to enter the Straits of Magellan, we sailed on the 28th of May, and all went well until Edris arrived off Agua Fresco Bay, where Broad and Famine Reaches meet. Here the motor failed me, and the engineer—a German whom I had shipped at Punta Arenas in place of the former engineer, who left us there—could not fathom the cause; and, as we should require the engine more than ever in these dangerous waters, I ran back under canvas to Punta Arenas, arriving at 10 P. M. the same day. On the second of June, after repairing the engine, I again pointed the Edris down Broad Reach, and at 4 P. M. rounded Cape Froward, the southern extremity of the continent and my "fartherest south." Soon after dark we anchored in Snug Bay under the lee of Lambert Island, where we spent the night.

The engine was doing fairly well now and would do better when we got out of this damp, cold climate, I believed, though I found that the engineer I had shipped knew very little about gas engines, and this was the cause of much future trouble. Our pilot left us the day before we sailed, and as I carried no mate, it was pretty hard on me; but man can do much when he is put to it and on his mettle, and, with a determination to "make good," I took a good night's rest and on the following morning at 7:45 continued on through Forward Reach, English Reach and into Crooked Reach, where the tide was adverse; and with no gasolene to spare, I decided to anchor rather than "buck" the current. So we put into Borgo Bay and, as it was still daylight, I landed in the power dory and visited the signboards placed there by the crews of visiting steamers (the chart mentions them) and pinned my card, with the name Edris and the date upon it, to a sign marked "S.S. J. L. Luckenbach, June, 1910."

On the following morning at 3 o'clock I got under way, and with the engine doing well I got as far as Sea Reach, where the wind hauled into N. W. and freshened into a gale. I was then under sail alone, having stopped the motor, as I had had a fair wind up to that point. The engineer tried in vain to start the motor, and as the sea made up and as I saw that I could not make Tamar Anchorage, just ahead, and but 15 miles from the entrance to Smyth Channel, I had to turn back and anchor in the mouth of Player Pardu Bay, 50 miles from Smyth Channel. The next day being still stormy, with wind dead ahead, I changed my anchorage further in, where I lay in greater security. The gusts of wind, called "williwas," that swept down from the high mountains were at times fierce, laying Edris over on her side and making her tug at her two anchors until it seemed at times as if she would straighten out the links in the chain, which I had all out on one anchor (75 fathoms) while a new hawser was bent on the other. However, the ground tackle held, and the next day, June 6, was more moderate, so we got some respite, of which I was much in need, as I had been up since 2:30 A. M. of the 4th. My present crew were a good, willing lot, but had no snap to them, and in these waters one needs real *live* men—not the kind that *walk*, nor those that *run*, but those that *fly*. (I have not seen this kind in years.)

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NEAR THE EASTERN ENTRANCE TO THE STRAITS OF MAGELLAN, WHERE THE COMBERS OF THE ATLANTIC BREAK AGAINST A BLEAK SHORE. NOTE THE PENGUIN IN THE SURF

The barometer, which had been doing stunts (jumping from 30.6 to 28.0 flat) since our arrival in the Straits, rose from 29.1 to 29.62, and the weather began to get more settled. I noticed also that the temperature was less severe on the westerly side of Cape Forward, due, no doubt, to the fact that on the easterly side the prevailing winds came from the snow-mantled mountains of the Brunswick Peninsula, while on this side they blow from the Pacific. At noon of that day, June 6, we got under way and ran some 5 miles; but found that the wind, which appeared fair at this time, to be local, and had to return to Player Pardu Bay, where

FOG SHUTTING DOWN IN ENGLISH NARROWS

MOUNTAINS ALONG SMYTH CHANNEL, NORTH OF STRAITS OF MAGELLAN

we spent the remaining hours of daylight in getting fresh water on board from one of the mountain streams in the vicinity.

The following day we tried it again and reached an anchorage in Tamar Bay only after three hours of the roughest weather, with the wind S. E. and followed by a calm which left us at the mercy of a heavy sea, in which little Edris labored heavily, breaking the gooseneck to the fore boom and compelling us to set the reefed mainsail in place of the storm trysail I had been carrying to steady her up. One of the Braun-Blanchard steamers, the Alexandra, sheered over towards us in passing that she might render us assistance, if required, and I asked her captain to report me with engine out of commission. About dark the sea moderated and, with the aid of our motor dory, we gained an anchorage about 9 P. M., where we laid all the next day becalmed within 15 miles of Smyth Channel entrance. We had not seen the sun for five days, but at 10:15 A. M. of the 7th it showed itself above the glacier mountains to the north of us, giving a beautiful view of the glacier itself, with its light blue shadings; but its stay was brief, and at 1:30 P. M. it sank below the snow caps to the N. W. It was on this day that I found that both of my anchors were bent in the shank, due to the strain placed upon them in Player Pardu Cove.

WE SIGHTED THE STEAMER CHILE IN SMYTH CHANNEL

The poor Edris did not look much like a yacht now, with her decks loaded with gasolene and water in cases and tanks, her sails and cordage wet and dirty, and in appearance was more like a sealer or fisherman than the tidy little yacht that used to moor off the Royal Palm Hotel at Miami, Fla., each winter. (She held the record for the run from New York to Miami—5 days 6 hours, I believe.) She was now making a record for the *longest* time in the Straits, I feared, for it either blew a gale or there was no wind at all, and with no motor that I could depend on, no pilot, and daylight for only eight hours each day, we were sadly handicapped and had to go slow, for it took a goodly portion of that daylight to find harbors each night—*harbors I had never seen before,* and hard to get into on account of the wind invariably blowing *out* of them. To one who may not know what this means, I will try to explain.

Just before dark I would try to find a haven for the night. Satisfied that I had done so, I would head for it as well as the wind would permit; if the wind drew *out,* our chances of getting in before dark were poor. We were often until 9:30 P. M. making an anchorage, and the strain on one's eyes looking for rocks, etc., in the gloom, with those mountains towering above and the most irregular soundings (from 365 fathoms to nothing within the space of a few miles), made the evolution a most trying one, and one that got on our nerves at times. Often I had Edris blown down on her side until the water came over her lee rails within 50 yards of where she was to let go her anchors, and at other times have had to tow her in with the dory, it being so calm. Many of the so-called harbors here are but dark nooks in the side of the mountains, easy of access for a steamer only.

So our advance up Smyth Channel w. necessarily slow with the engine working badly; and it was necessary to hoist sai and beat to windward several times durin the short day, with the wind, which blows almost constantly down the channel, freshening to a half gale and stopping ou progress to such a degree that one of ou bright seamen would whistle a dead march just to brighten things up a little.

In Mayne Harbor, where we lay on the night of June 12, we were

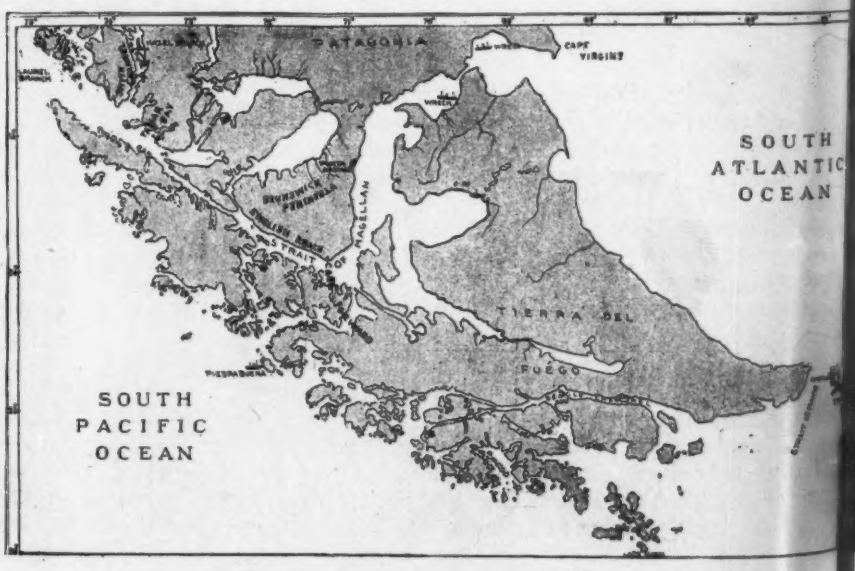


CHART OF THE STRAITS OF MAGELLAN AND THE ENTRANCE TO SMYTH CHANNEL

ONE OF THE PLEASANT LITTLE OBSTRUCTIONS TO NAVIGATION IN SMYTH CHANNEL

THE SHORE LINE OF THE INSIDE PASSAGE ON THE LOWER WEST COAST OF CHILE

visited by a family of natives in one of their primitive canoes. Seven *humans*—that is all one can call them—grandfather, son, wife and four children, from 14 years to an infant in arms, almost nude, with simply a skin of some sort to protect them from the snow and rain that was falling almost constantly. I never met more forlorn and miserable people in my fifty years at sea. They accepted tobacco more readily than food, and when I gave the father a filled pipe it was passed from one to the other until all had smoked it except the baby. The baby was passed up on deck by the mother to the father, who took the infant by one wrist and hauled it up as you might pass up a hare by the ears that I might see the poor thing with not a rag on it and the rain and sleet in its hair dropping on its little, healthy-looking, nude body. Yet that baby's smile I shall never forget, and it did not resent the treatment in the least. It is a funny world! The temperature was below freezing and the air damp and full of sleet, so that the decks were covered with ice, making it dangerous to move about or go forward.

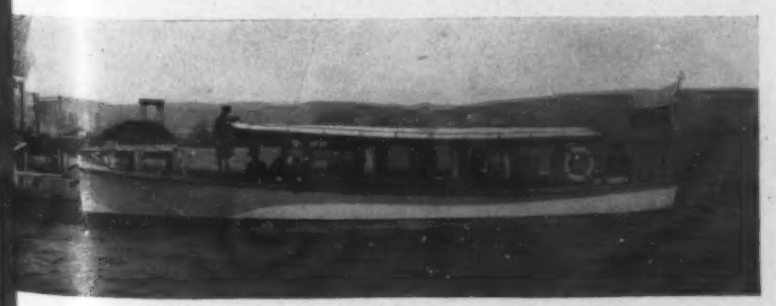
Our sails and deck had not been dry in eight days. On June 16 we passed through Icy Reach, encountering much fog and ice, but with the motor working fairly well, although the reverse gear was broken, which hindered us somewhat in maneuvering. We got through without mishap, and at 5 P. M. gained Grapple Port, having made a run of 50 miles that day—the best time made in a week. That night I slept like an infant.

The following day we passed through English Narrows and gained an anchorage in Hoskyn Cove, where we remained over night, and on the 18th tried to stem a head wind and sea; but it was too much for the motor, which the engineer could not get to understand, so ran into Halt Cove, 3½ miles farther and anchored, as the gasolene was by this time running low. With 75 miles to run to the Gulf of Penas (in 47 So. latitude), the nearest settlements, I deemed it best to husband it. Our supplies were also going fast, and when the wind and sea allowed us to put to sea again our provisions, which had been dealt out sparingly for a week or more, gave out, with the exception of salt beef and tea, and for three days we subsisted on these until Sunday, the 23d, when we sighted the steamer Chile, of the Braun-Blanchard Line.

EDRIS BEACHED AT VALDIVIA FOR TEMPORARY REPAIRS

With ensign Union down we bore down and spoke her. We had already lowered the power dory, with the cook and two seamen in it, to head her off; but the motor refused to work and it failed to reach the steamer. The steamer turned from her course upon making out our reversed ensign and I ran the Edris alongside, as I had no other boat I could lower, and obtained sufficient provisions to last us for at least two weeks. The captain of the steamer was very courteous and offered to tow us to Island Harbor, some 12 miles; but with my tender several miles astern I was obliged to refuse, and we parted company with the good wishes of her officers and an encouraging farewell from her passengers.

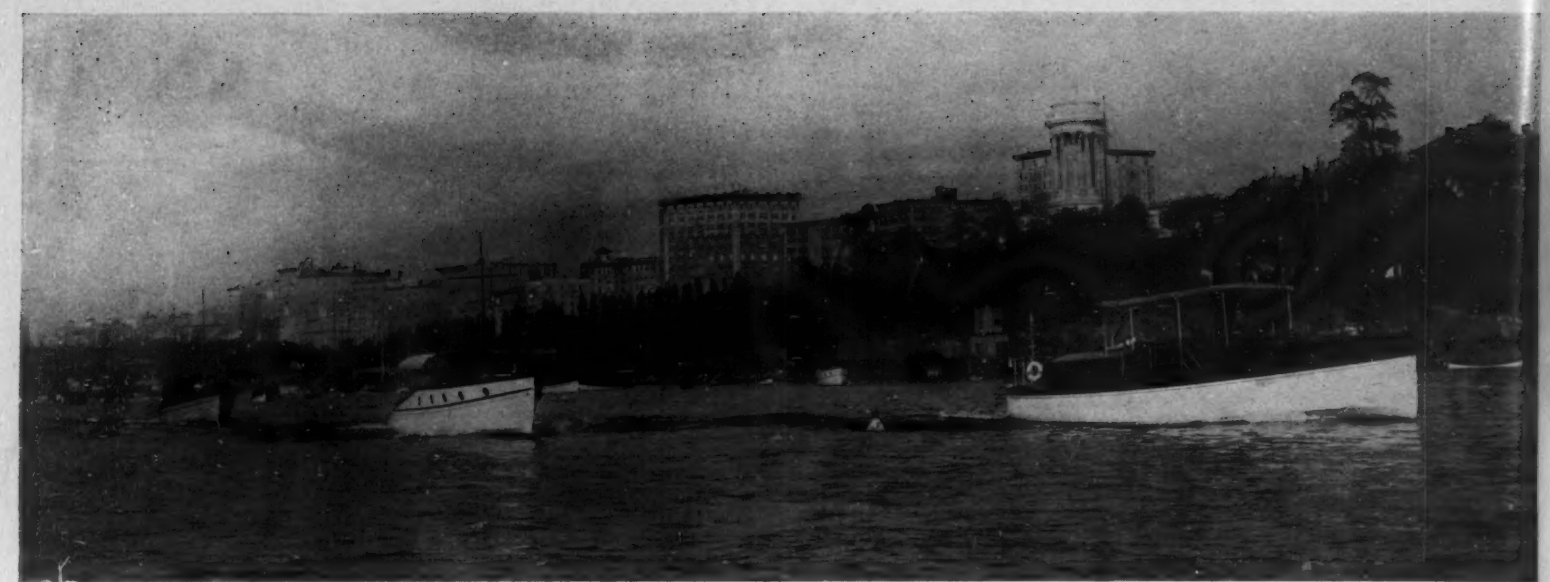
We stood back under sail, picked up the dory, and soon after the engineer succeeded in starting the motor, and shortly after dark we arrived at Island Harbor, in Messier Channel, 25 miles from the northern end of the inside route around the Horn. We put to sea next day and arrived in Vallemar Roads on the following night. The weather conditions and barometer the next morning decided me in taking an inside route through Darwin Channel to some port where I could obtain gasolene and wood. Our leak, which had commenced again in Smyth Channel, at this time amounted to about 2,000 strokes per day, and I needed gasolene more than anything to hasten our arrival at Valparaiso or some port where we might haul out and have repairs made on the bottom. We located the leak around the plates near the centerboard trunk where they had corroded, due to poor cementing and the drippings from the ice box. It was something that we could not repair at sea, and a soft patch would have to be put on from the outside until new plates could be fitted.



THE POWER BOAT THAT TOWED US OUT AT VALDIVIA

On June 26 we anchored in Port Falanc and the following day passed through Darwin Channel and reached a safe anchorage under the lee of Mount Cuptana (5,446 feet high) and close under Letroro Island, where we passed a most comfortable night, the first in more than a month. Our leak, which at one time had increased to some 6,000 strokes per day, had diminished to a little more than 3,000, and the weather was getting much warmer or, rather, less cold. It was well that it was so, for, on leaving Nelinka, the wind, which was fair, south, and promised so much with

(Continued on page 382.)



THE CRUISER CLASS COMING DOWN ON THE STARTING LINE. POOR TIMING ON THE PART OF THE BOAT IN THE REAR IS RESPONSIBLE FOR HER BAD POSITION

How to Run Power Boat Races

Part II. The Handling of the Race. Duties of the Regatta Committee. Laying Out Courses

By HERBERT L. STONE

HAVING gone over the possibilities of the different methods of handicapping which were described in the last issue, and picking out the one which seems best suited to the fleet of any particular yacht club, it is then up to the Regatta Committee to perfect the details of the race and do the actual work toward bringing the regatta to a successful conclusion. This is not an easy matter or one that can be slighted, and the members of the Regatta Committee have their work cut out for them, if they are going to do it properly. A race committeeman's job during the racing season is not a sinecure as, unfortunately, many members of race committees seem to think, and requires a lot of intelligent work and very close attention to details. This is especially true where the contestants are not used to racing. In sailboat races the majority of the owners of racing boats have been at the game long enough to be familiar with the details, and do not require to be especially drilled on them; but with most power boat men it is different, and the most minute instructions must be issued in advance.

In every race where handicapping is used it should be insisted upon by the Regatta Committee that the data for handicapping is in its hands *before* the race, and not *after* it; and every boat that is going to race should first qualify for her time trial if the actual performance basis is used. It is just as easy to do the measuring or timing before as after a race, and the result is much more satisfactory. If it is not done the offending boat may get away after the race before she is measured, and the result of the race may thus be tied up indefinitely. Motor boat owners have been extremely careless in this respect in the past, and the matter cannot be insisted upon too strongly by members of racing committees.

The Regatta Committee of a club has complete charge of the race, and having decided upon the method under which the race is to be run should issue their instructions and abide firmly by them. In most clubs the word of the Regatta Committee is final, appeal from its decision being a very difficult matter; and for this reason it should lay its plans carefully, covering all possible points that can be foreseen, and then, to avoid confusion, should not change any details of the system before the race.

It is well, if there are a number of boats entering the race, to have a full set of instructions printed. These instructions should contain information on the following subjects:

Description of the start and finish lines; time of start; courses (including full description); the rules under which race is run, which should include a description of the method of handicapping; restrictions as to crew; distinguishing marks of the committee boat; information on protests; when entries close, etc. A facsimile of a simple form of instruction sheet follows:

BUFFALO YACHT CLUB

Special Regatta for Motor Boats

SATURDAY, JULY 6, 1912

Open to racing and cruising power boats owned by members of any recognized yacht or motor boat club, to be sailed under ——— racing rules.

Classes.—For all recognized (A. P. B. A.) classes of speed boats and hydroplanes and cruising boats.

Starting and Finishing Line.—The starting and finishing line will be off the club house, between a white flag on the committee boat and a stake boat flying the club burgee. The committee boat will fly the race committee flag.

Course.—From the starting line, N. E. by E., 2 miles to and around red gas buoy off "Scotch Caps," thence S. W. by S. ½ S., 3 miles to and around the black spar buoy off Prospect Point, thence N. W. by N., 2 miles to and around the stake boat at the starting line, leaving all marks on port hand. Racing boats and hydroplanes will cover this course three times, other classes twice.

Start.—Speed Boat Class: 9:50 A. M., warning signal, a square white flag; 9:55 A. M., preparatory, Blue Peter; 10:00 A. M., start, one red ball.
(Start of other classes to follow as the committee may arrange.)

Measurements.—Yachts in the regular classes must be measured, and a certificate or certified copy of rating must accompany the entry. No yacht will be entitled to receive a prize unless this condition is complied with; or, handicap boats will be handicapped according to their performance in previous races. Racing numbers may be obtained from the committee and must be displayed.

Postponement of the start of the race, if necessary, will be made for 15 minutes, or a multiple thereof, and will be signaled by code flag "G."

Recall Signal.—Should a yacht cross the starting line before her starting signal is given, she must return, giving way to other yachts crossing the line at the proper time.

A white ball with a red horizontal band, and a blast of a whistle or foghorn, will be the signal for each yacht to be recalled.

Entries.—Entries will be received by the committee at the club house up to 8 P. M. on July 5.

Prizes.—Valuable prizes will be awarded in every class where two or more boats start. Second prizes will be given in each class if four boats start and third prizes if six or more boats start.

Crew.—The total number of persons on board a boat in the race shall not be less than two, and no person shall board or leave a boat after the starting signal except in case of accident.

Protest.—To be considered, protests must be made in writing and received by the committee within one hour after finishing.

TOO SHARP A TURN. BOATS MUST SLOW DOWN TOO MUCH FOR A ONE-MARK TURN

SCORING FOR A START IN A WESTERN REGATTA. COMMITTEE BOAT IS SEEN AT LEFT

Regatta Committee.—John Smith, chairman; John Jones, John Doe.

FORM OF ENTRY BLANK

Date.....

To the Race Committee.....Yacht Club:
Please enter my boat.....for the race of your club to be held on.....
Class..... Division.....
Rating measurement.....
Enrolled in.....Motor Boat Club.
Signed.....
Address.....

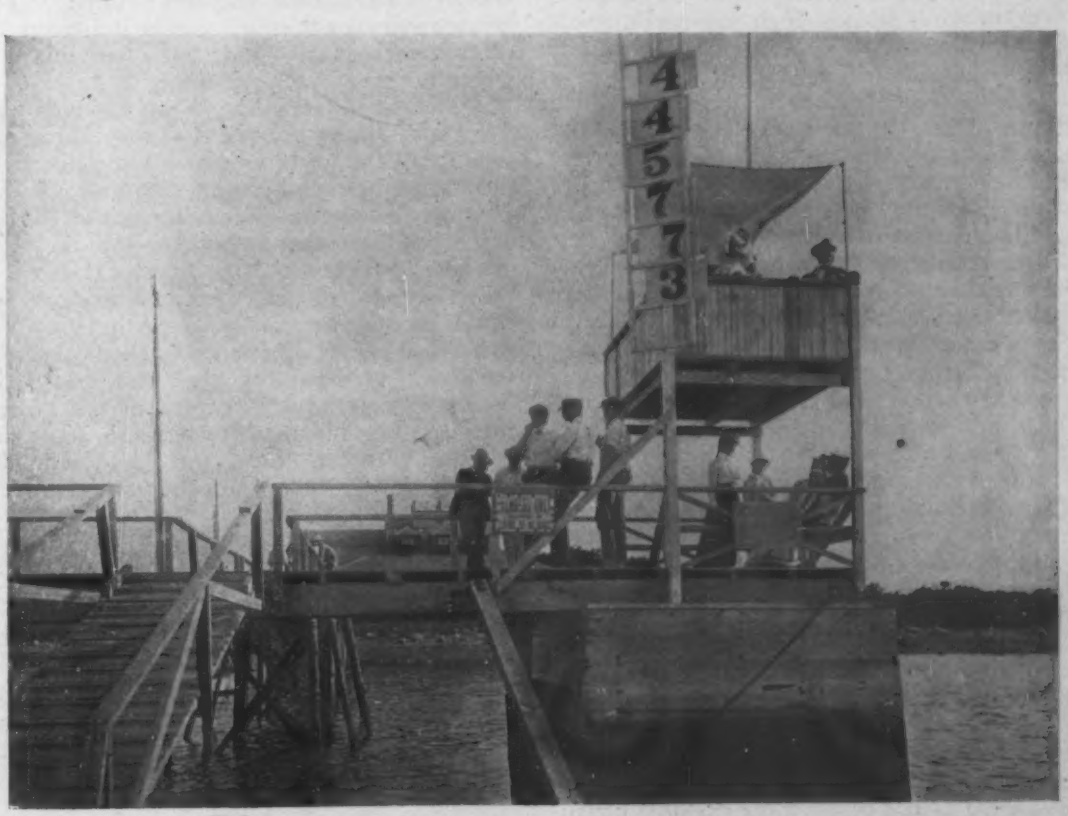
It would be wise also to have a chart of the course printed on the back of this instruction sheet, while a form of entry blank may be printed on the bottom, so that it may be cut off and sent in with the entry. This circular should be sent to every boat owner in the club and also to other clubs in the vicinity, if it is an open race; and with the instructions fully set forth it should not be necessary for contestants to come near the committee boat or bother the Regatta Committee with senseless questions.

In laying out the course the committee will, naturally, select the most available one within a reasonable distance of the club. It is desirable to have the start and finish as near the clubhouse as possible, so that non-racing members can see the best part of the race. The course may be any shape that is desired, though it is preferable, if possible, to have a triangular course or an elliptical one, so that the boats on one leg of the course will not bother boats on any other leg by passing them too closely. Government buoys make good turning marks, and the distances between them can usually be obtained accurately from a government chart. If, however, an elliptical course is used, it is best to have the turns at either end wide enough so that boats may take them at a fairly high speed. Sharp turns in a motor boat race, especially with speed boats, are apt to be very dangerous, as the average high-speed boat cannot turn in a particularly short radius.

To add to the interest of the spectators, it is also well to lay out a short course with two or three laps rather than a long course of only one lap. For example, an oval course with two straightaways of two miles each and three turning buoys at each end with a quarter of a mile between them makes a very good course of five miles in length. This can be run over two or three times, according to the speed of the boats. The diagram shows how this course can be laid out.

The length of the different legs can be measured either from known shore marks or by sending a motor boat with an accurate taffrail log over the course to set the stakes. In the latter case allowance must be made for any tide or current that may be encountered. Most time allowance tables are figured in nautical miles of 6,080 feet, and it is advisable to use this standard of measurement if possible. If this is not desired, statute miles can be used, though this will require reducing the statute miles to nautical miles in order to apply the time allowance tables, and will require some additional figuring. Nautical miles, however, are the standard measurement for use on water and should be used where possible. Great confusion has resulted in the past over various speed records, owing to this disparity between nautical and statute miles.

If a chart of the course is not printed on the instruction sheet, it would be well to have one drawn by hand and placed on the bulletin board of the club for inspection, showing just which way the boats run and on which side they leave the different buoys or stakes. In laying out a course it always saves confusion to have the start and finish in the same direction, for if the boats finish between the committee boat and the stake boat in the opposite direction from which they started some "boob" is sure to get the instructions balled up and come down in the wrong direction. If he happens to be in the leading boat, the chances are ten to one that the other boats will follow him, in violation of the instructions, thinking that the skipper of the first boat



JUDGES STAND ON CLUB DOCK. RACING NUMBERS OR SIGNALS CAN BE DISPLAYED TO ADVANTAGE IN THIS WAY

SHOWING HOW THE FLEET IS KEPT OFF OF THE COURSE IN A GOLD CHALLENGE CUP RACE. THE SPECK IN DISTANCE IS ONE OF THE RACERS COMING HOME

must know what he is doing. It is also customary in this country to run courses left-handed—that is, turning all marks on the port or left hand. This is not a hard-and-fast rule, and different customs prevail in different localities; but the majority are run in this way. It is a wise precaution to have the course, if not too long, properly patroled by power boats that are not in the race, so as to warn off other craft and keep them out of the way of the racers.

In laying out the course it is well to use the club float or dock for the committee stand (provided there is room and enough water) rather than a committee boat. This keeps the committee in touch with the club at all times and prevents any possibility of the line being shifted by reason of a committee boat's dragging. If a course can be laid out in this way, a stake boat should be anchored about 200 yards off the committee's stand. This gives a starting line of 600 feet, which is wide enough for even a good-sized fleet of boats. If this is impracticable, some club launch or large power cruiser—the larger the better—should be used as a committee boat, it being essential that she have a mast from which to fly the various starting signals. In this case, also, a stake boat should be anchored opposite her, about 100 yards distant, or else some fixed mark placed on shore, such as a flag pole with a marker flying from it, so that the boats may be timed as they cross this line between the flag and the committee boat.

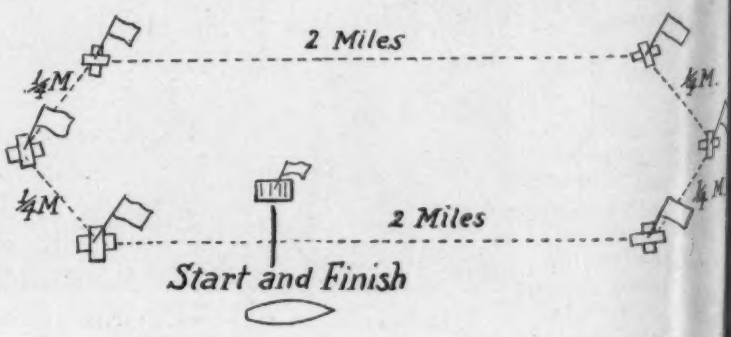
If government buoys are not used, stake boats will have to be provided for every turn; and if the turn is a sharp one, three markers should be used. For these markers small dories or flat-bottomed skiffs can be used, with a mast carrying a white or colored flag nailed to one of the thwarts. In anchoring these it should be seen that the ground tackle is heavy enough to hold the boat in position, no matter how hard the wind blows, for nothing is so disconcerting to a man in a race as not to find the stake boat where it should be. Another form of turning stake may be made in the form of a cross-piece of two planks, four to five feet long, with a staff erected from the middle of it carrying a small flag or marker. A chain suspended from the center of the under side of this cross-piece, with an anchor or grapple on the bottom, such as is shown in the accompanying cut, completes an easily made and satisfactory turning mark. Much trouble is saved, however, if regular government buoys can be used for the turns.

We now come to the actual starting of the boats in the race. Having received and sorted out the entry blanks, the committee knows how many classes it has to provide for. In power boat races where each race can be run in less than an hour it is best to run off each race by itself, so as not to have the possible confusion of two or more classes of different speeds being on the course at the same time, though it is, of course, perfectly feasible to run boats of widely varying speeds over the same course by starting one five or ten minutes after the other. For instance, a class of speed boats may be started first, followed at a ten-minute interval by a class of cruisers and open boats. As a rule, however, especially with speed boats, it is well to have one class finish before the other begins.

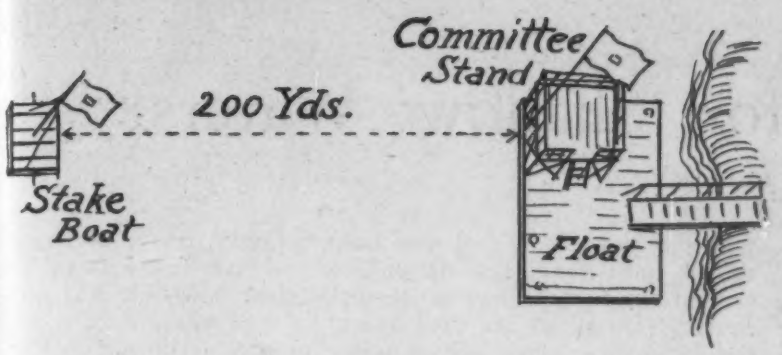
Various methods of starting are in vogue in different parts of the country; but the most satisfactory, to my mind, is the regular two or three-gun start, at a given time. For example, if the race is to start at 11 o'clock, a warning gun or whistle can be fired at 10:55, at which time one of the code flags is run up on the signal mast, with the actual starting signal five minutes later, at 11 o'clock, a red or blue ball being sent to the masthead with the gun or whistle, so that those who cannot hear the sound on account of the noise of the engine can see the signal. It is a good plan to haul the warning signal down either 1 minute or 30 seconds before the start, the time being indicated on the instruction sheet so that the contestants can gauge within this fraction of time how close they are to the starting signal. A three-gun start is handled in the same way, except that a preparatory signal would be sent up at 10:50, or 10 minutes before the race. In a power boat race five-minute intervals are pretty long and might be very well reduced to two or three minutes between guns. Under this method all of the boats are supposed to start together.

If boats are started on their handicaps so as to make them all finish together these signals will have to be varied. In this case give each contestant in the race a card showing just when he starts on his handicap—the slowest boat first at, say, 11:30; the next boat, 11:35; the third at 11:38, etc., the scratch boat going last. To save confusion and possible errors, a gun may be fired when the time for each boat comes, and that boat's number should be run up on the signal mast or held in the air by one of the members of the committee so that the skipper of that boat can see it. Each boat should have her racing number tacked on her side, and the corresponding number can be painted on a large square piece of cardboard with letters large enough to be seen at a distance of several hundred feet, so that when the first gun goes off and the boat's number is held aloft the skipper of that boat knows it is up to him to get his craft going and across the line. If it is possible, it is well to have these numbers printed on cloth in the form of a transparency, so that they can be hoisted on the signal mast of the committee boat or stand; but often this is impossible in a club where not much racing is done.

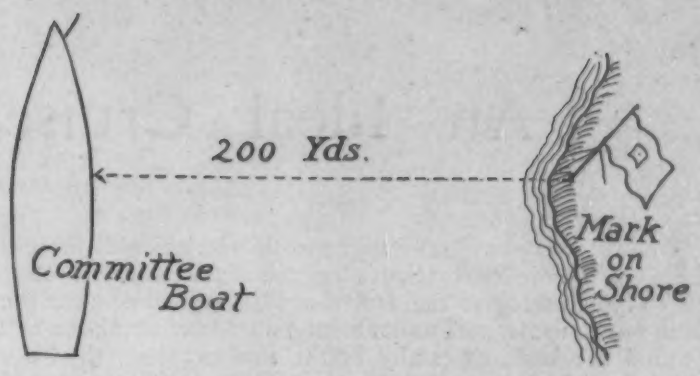
A method in use in the West, which is quite spectacular, is the flying start, being a survival of the old racehorse days. This consists in all the boats lining up some distance back of the line of the starting gun and coming down on the line abreast, scoring for the start just as they do in a horse race, the boats keeping as near abreast of each other as possible until they hit the line. If they do not get a good break the committee does not send them away, and they circle around the committee boat and score down on the line again for another start. When they finally get a break a flag or ball signal can be dropped, and the boats keep on their way down the back stretch for the first buoy. This method, while spectacular, is hardly as good as the other method by which a man is put on his mettle to have his boat under full speed and hit the line with the gun. Here good judgment of time and pace tells in a man's favor, and the first boat over the line has the ad



A WELL LAID OUT 5-MILE COURSE WITH WIDE TURNS



USING CLUB FLOAT FOR COMMITTEE STAND



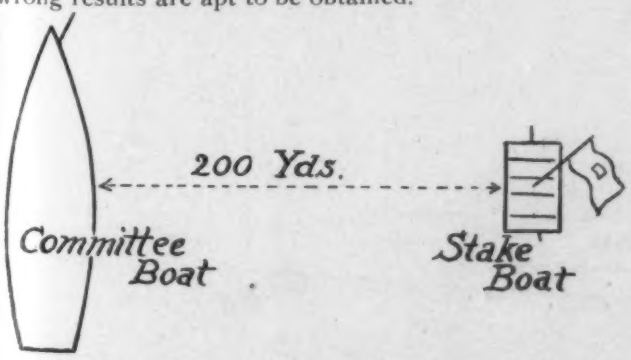
USING SHORE MARK FOR ESTABLISHING STARTING AND FINISHING LINE

vantage. There seems no reason why, when a race is scheduled for a certain hour, that those that have their boats running and ready for the start should be held up to wait for those who cannot get their engines turned over or, for some reason or other, are not ready.

The committee should not only time the boat at the finish, but, for the purpose of keeping tabs on them, should also time them as they pass the committee boat on each round of the course; and the racing sheet should not only have each boat's name, racing number, time allowance, etc., but should have a column for each leg of the course, for her finish time, and one for her corrected time after her handicap has been applied. In both starting and finishing a race the time of a boat should be taken when the point marked by the fore flag staff of the boat crosses the line. In starting, if this part of a boat crosses the line before the gun, she should be given the recall signal, which may consist of the rapid dipping of a red flag, and forced to start over again; in which case she should swing around behind the committee boat so as not to get in the way of the other starters.

The utmost accuracy should be assured in getting the finish time. If a chronometer is available, it is best to use this. If not, an accurately rated watch may be used. A stop-watch is handy, but not necessary. One member of the committee should hold the watch, another should watch the boat for the instant she crosses the line, while the third should note the time on the racing sheet in the proper column. The man taking the time should count the seconds out loud as the boat approaches, in this manner:

The man on the lookout, we will say, sings out when a boat is within 20 seconds of the finish line, "Number 7 coming"; the man with the watch says, "4 hours 34 minutes and 1-2-3-4-5, etc., seconds," counting the seconds until the boat has shot by the mark, when the one watching her sings out, "Time," and the man handling the racing sheets puts down the number of seconds called off by the one holding the watch. This is easy enough when the boats finish separately. When they are close together, however, some confusion is apt to result. In this case, the man with the watch should keep on counting the seconds after the first boat has finished. For instance, if he had counted to 20 when Number 7 finished and Number 3 is right behind her, he would keep on counting 21-22-23-24 until the man watching sings out, "Number 3—time." With a little practice this system can be perfected so that there is a very slight chance of error. If it is not done in this way, and several men try to take the time, confusion and wrong results are apt to be obtained.



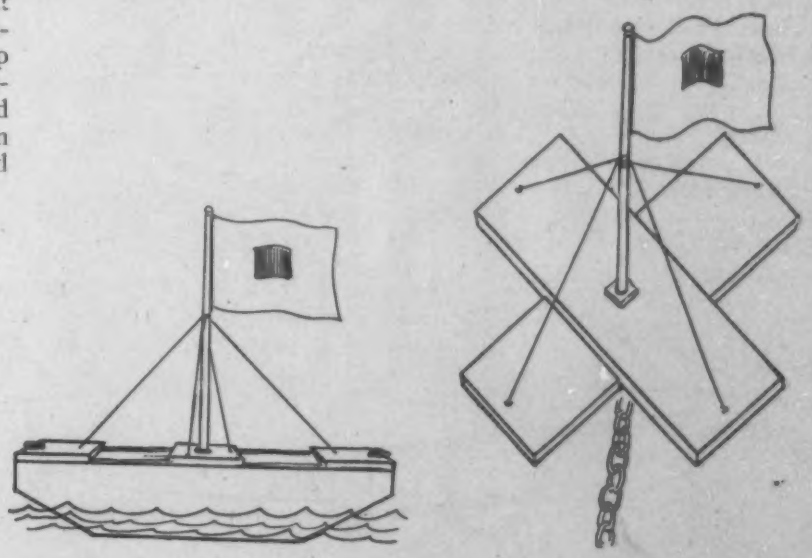
CONVENTIONAL ARRANGEMENT FOR STARTING AND FINISHING LINE

The committee should insist that they are not to be bothered or spoken to when boats are finishing, and all those not actually engaged in the conduct of the race should either be kept off the committee boat or relegated to the stern, where they may have easy access to the ice chest of the philanthropic owner of the boat.

While on the subject of timing, it is also wise to count the last 30 seconds before the *start,* when the two or three-gun system is used, to be sure the guns are fired correctly. The committee's place should be near the signal mast, so that signals can be handled promptly, and as the time approaches for the warning and the starting gun the man holding the watch should sing out one minute before the time of either of these guns, "One minute to go"; then, "30 seconds to go," "10 seconds to go," "9-8-7-6-5-4-3-2-1—fire!" counting each second of the last ten. It is only by such attention to details that the accuracy necessary in a race can be obtained. The Regatta Committee should leave nothing to haphazard measurements, but should give its entire attention to the handling of the boats, as nothing makes so much irritation and bad feeling as the bungling of a start or finish; and no man who is taking the trouble to go over the course should have his chance spoiled by improper timing.

After the race is over and the last boat has finished, the committee should figure the corrected times by deducting the handicaps or time allowances from the elapsed time of each boat, and make their announcements as soon as possible, posting the results on the bulletin board of the club. These figures should always be checked by at least two members of the committee before being posted as final. While speaking of this matter, it might also be well to warn contestants to keep away from the committee boat at the close of the race, and to refrain from bothering the committee with foolish questions as to who won, how their particular boat finished, etc. This is a habit that is altogether too prevalent at present.

In the next issue we will take up the running of a race from the contestant's standpoint, showing the best methods of handling the boats during the actual racing.



TYPES OF STAKE BOATS AND MARKS

An Ideal Cruiser for Shallow Waters

By JOHN G. ALDEN, N. A.

IN all of the sailboat designs in this series, with the exception of the big ketch Esperanza, the boats have been of the keel type, owing to the fact that no limitations were put upon them as to draft, and, undoubtedly, a keel boat makes a better all-round sea boat, especially in the smaller sizes, than a center-boarder. There are, however, many places where a keel boat is out of the question and where the depth of the water limits the draft to not over three feet, while at the same time conditions are such that rough water is frequently experienced and an able, seaworthy craft is necessary. In response to many requests which have come in for the design of a boat of this type, I submit the plans herewith, which represent, to my mind, an ideal type of boat under the limitations for those yachtsmen of our Southern and Gulf coasts and other unfavored localities where bottom can be had with an oar every time the boat comes about, and where sticking the nose in a mud bank or sandpit is not an unusual occurrence. The task set before me was to provide comfortable living accommodations for three men in an able and seaworthy craft, not over 40 feet long and with the greatest draft of 30 inches, without killing sailing qualities or speed.

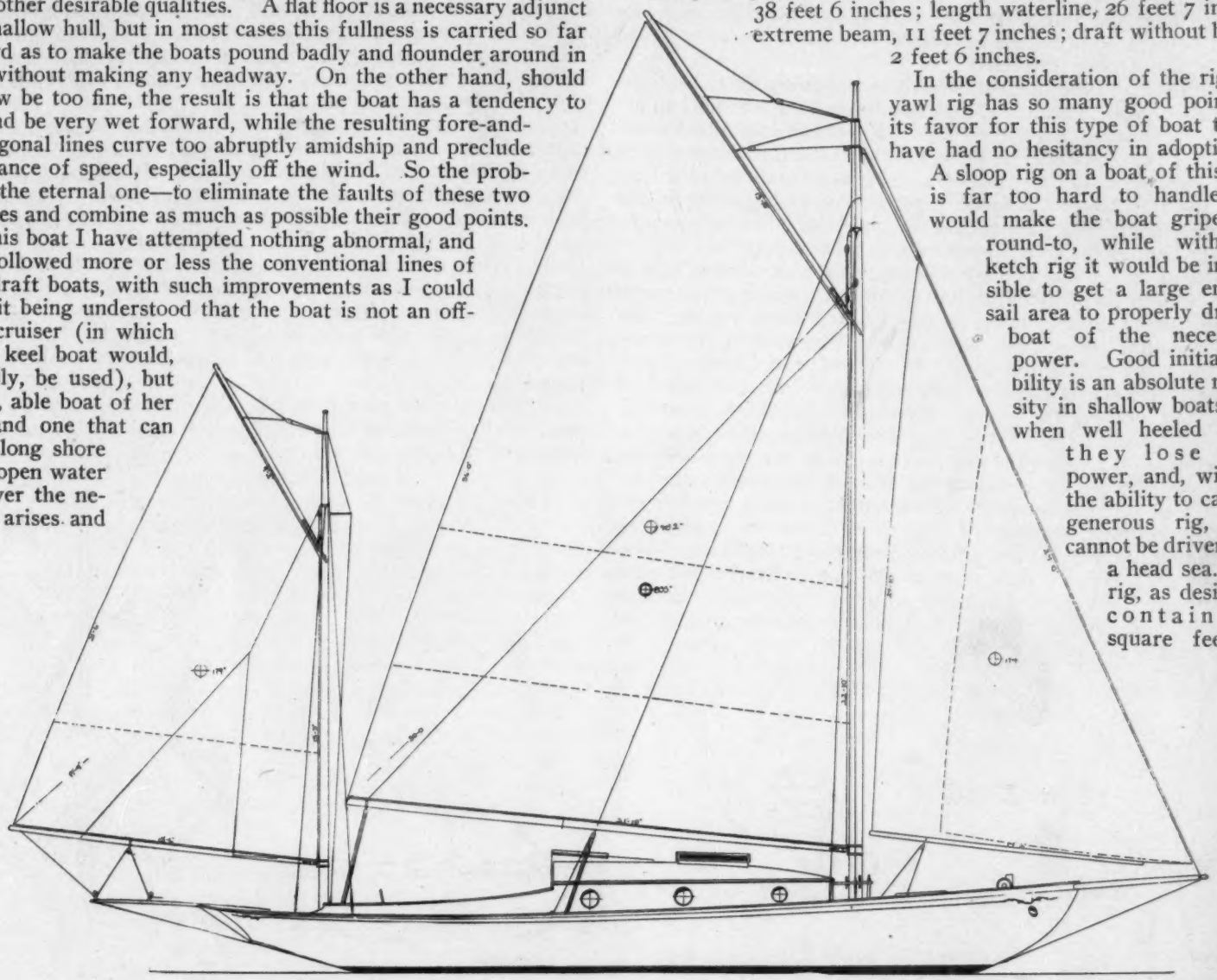
Naturally, the principal fault of very shoal-draft boats is their poor performance in a seaway, and in this design I have endeavored to overcome this without sacrificing too much of any of the other desirable qualities. A flat floor is a necessary adjunct of a shallow hull, but in most cases this fullness is carried so far forward as to make the boats pound badly and flounder around in a sea without making any headway. On the other hand, should the bow be too fine, the result is that the boat has a tendency to root and be very wet forward, while the resulting fore-and-aft diagonal lines curve too abruptly amidship and preclude any chance of speed, especially off the wind. So the problem is the eternal one—to eliminate the faults of these two extremes and combine as much as possible their good points.

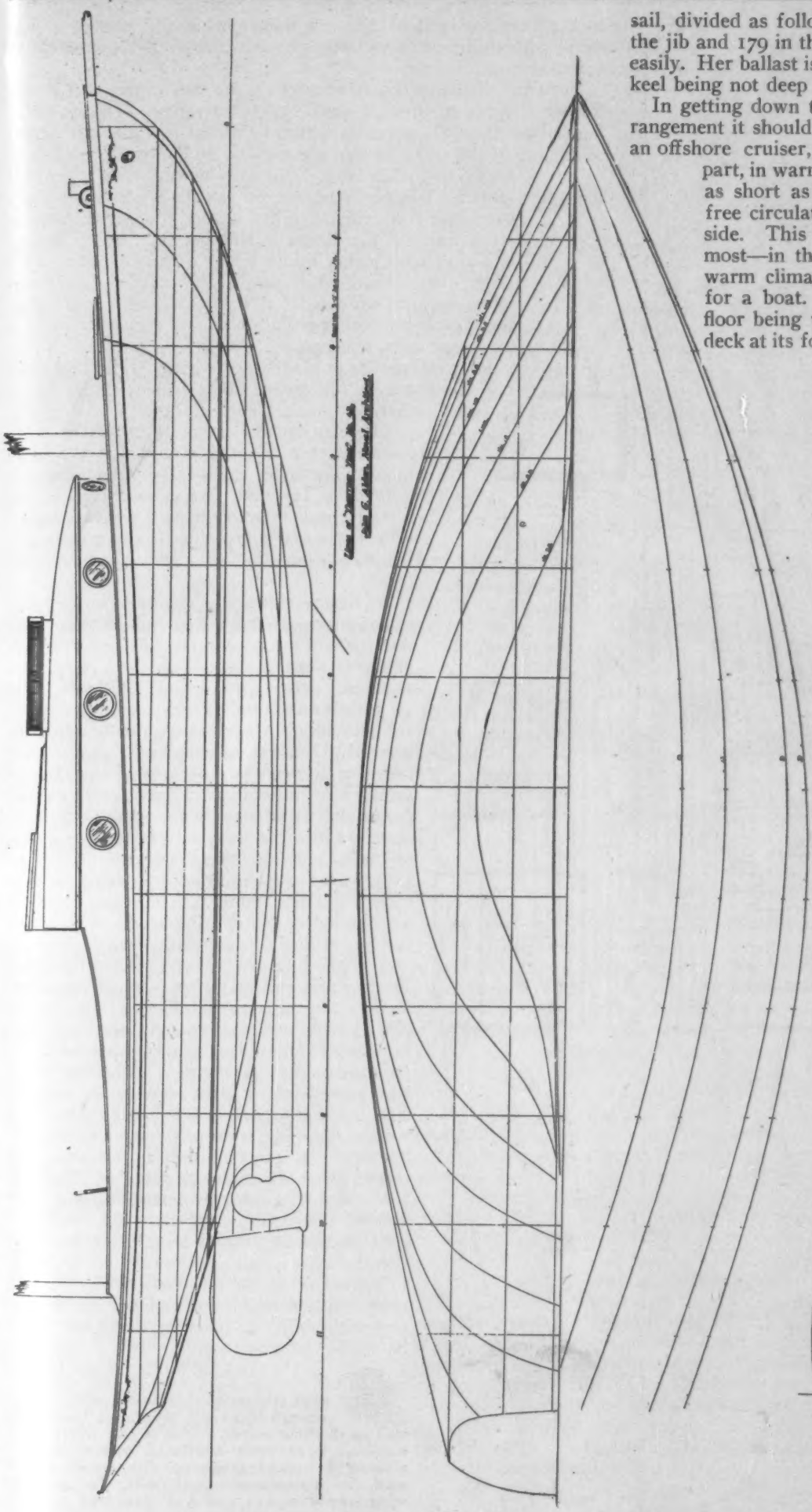
In this boat I have attempted nothing abnormal, and have followed more or less the conventional lines of shoal-draft boats, with such improvements as I could make, it being understood that the boat is not an off-shore cruiser (in which case a keel boat would, naturally, be used), but a good, able boat of her type, and one that can coast along shore and in open water whenever the necessity arises and take almost anything that may come her way. A careful study of her plans shows that the ends of the waterline forward are carried out farther than usual, making the bow overhang quite short. This allows the deck line to be kept rather finer and, at the same time, gives just as powerful bow sections as with a shorter waterline and a fuller deck line. The result is a reasonably fine entrance with sufficient power to lift over a sea and still make good headway against it, while the sheer is sufficient to throw the water off and keep her from rooting, without being so excessive as to offer too much windage in a hard blow.

With a craft of such limited draft there is not much chance for originality in the shape of the 'midship section, and it will be difficult to effect any great change in this direction without getting something abnormal. The bilges, however, are as easy as possible, the upper end of the turn being carried somewhat above the waterline. The after sections show a very clean run, with sufficient fullness to prevent squatting, and where it will do the most good in producing additional bearing surfaces. All in all, this design should produce a reasonably good sea boat—one that can carry her sail well and behave as a well-mannered boat should, though, of course, she would not be as comfortable in a heavy sea as a deeper boat.

The principal dimensions of the boat are: Length over all, 38 feet 6 inches; length waterline, 26 feet 7 inches; extreme beam, 11 feet 7 inches; draft without board, 2 feet 6 inches.

In the consideration of the rig, the yawl rig has so many good points in its favor for this type of boat that I have had no hesitancy in adopting it. A sloop rig on a boat of this type is far too hard to handle and would make the boat gripe and round-to, while with the ketch rig it would be impossible to get a large enough sail area to properly drive a boat of the necessary power. Good initial stability is an absolute necessity in shallow boats, for when well heeled down they lose their power, and, without the ability to carry a generous rig, they cannot be driven into a head sea. The rig, as designed, contains 835 square feet of





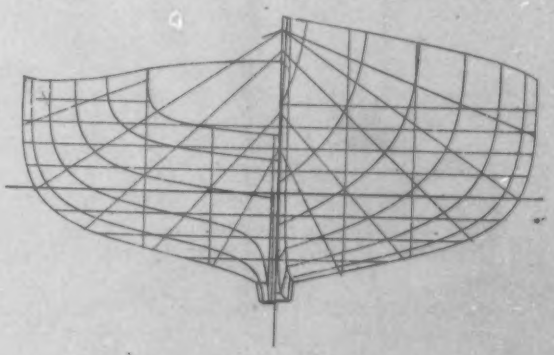
sail, divided as follows: 482 square feet in the mainsail, 174 in the jib and 179 in the mizzen or jigger. This she can carry very easily. Her ballast is to be carried inside, under the cabin floor, the keel being not deep enough to carry outside weight to advantage.

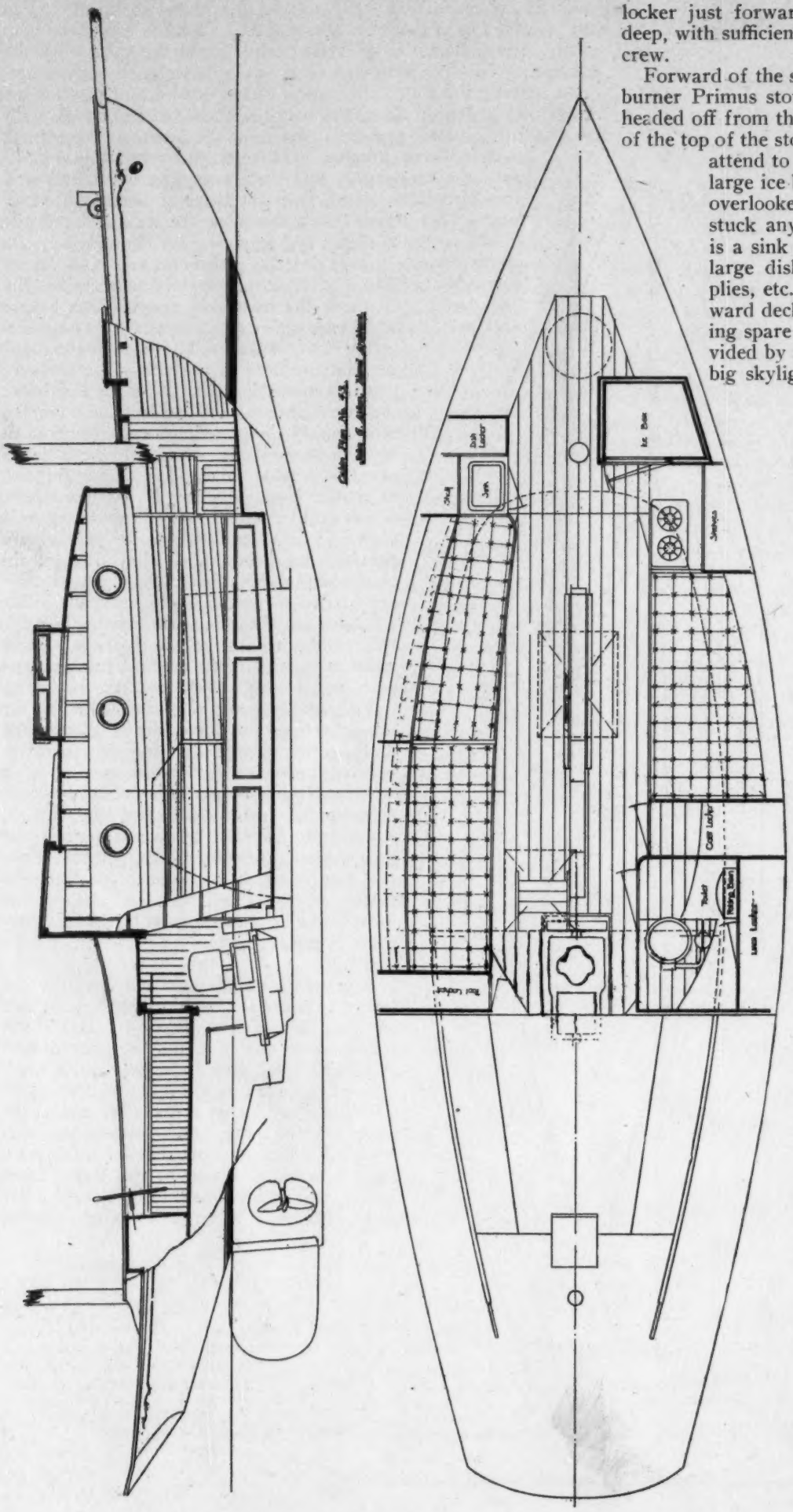
In getting down to a discussion of her layout and interior arrangement it should be understood that the boat is not meant for an offshore cruiser, and that she is to be used, for the most part, in warm climates. Hence, the cabin house was made as short as possible and wide enough so as to allow a free circulation of air over the transom berths on either side. This leaves more room where it is wanted the most—in the cockpit; and anyone who has cruised in a warm climate knows that no cockpit was ever too large for a boat. The cockpit, of course, is self-bailing, the floor being well above the waterline, and it has a bridge deck at its forward end, under which is located the engine.

There are seats on either side of the cockpit, but the deck is not carried in to form them, as it was desired to have the fuel tanks under the seats, and if the deck were carried in it would be impossible to get at them or to remove them, if necessary. There is, however, a movable bulkhead in front of them, from the front of the seats to the deck. These tanks should be of the seamless steel variety, as they are leak-proof. Hence, no provision has been made to have them drain overboard, which is not necessary, as they are carried in a watertight cockpit. The trouble with draining overboard in a sailboat is that when the boat is heeled down water is sure to come in through the scuppers, which will in time rust the tanks.

The companionway to the cabin is just to one side of the centerline so as to make access to the engine easy, and also so as not to have the main boom interfere when it is in its crotch amidships. The cabin has 5 feet 8 inches of headroom under the carlins, which is sufficient to allow the majority of men to stand upright; and though this is not full headroom, it is the most that can be gotten on the draft without spoiling the looks and ability of the boat by an unsightly cabin house that offers an undue amount of windage.

A great deal of thought was given to the layout to make the cabin as roomy and airy as possible. There are two full-length transoms on the port side and one on the starboard side, each three feet wide, with slat springs, making excellent beds at night. There is a tool locker at the after end of the cabin on the port side, while on the starboard side is a good-sized toilet room, containing folding wash basin, large linen locker, etc., with hooks for oilers at the after end. There is a large hanging clothes





locker just forward of this, 18 inches wide and almost 4 feet deep, with sufficient room to take care of the clothes of the entire crew.

Forward of the starboard transom is the stove space for a two-burner Primus stove or a small Shipmate range. This is bulkheaded off from the transom with a bulkhead rising to the height of the top of the stove, so that one may sit on the transom and still attend to the cooking. Forward of the stove space is a large ice box easily accessible—an item which is usually overlooked in cruising craft, where the refrigerator is stuck any old place that it will go. On the port side is a sink with locker under it for pots and pans, and a large dish locker, while ample shelves for food, supplies, etc., are provided. A hatch is shown in the forward deck for both ventilation and convenience in storing spare sails, anchors, etc., below. Ventilation is provided by seven large hinged port lights, while there is a big skylight over the center of the cabin, under which there is 6 feet 6 inches headroom.

The centerboard trunk through the cabin makes a convenient standard for a folding table. The after end of the trunk does not extend so far that one cannot step aft of it from the companion steps. This allows access to the starboard side of the cabin without the necessity of walking around the trunk.

As before stated, the engine is located just aft of the companion steps under the bridge deck, where it can be bulkheaded off from the cabin, if desired. It should be a 2-cylinder machine, either 4 or 2-cycle, of from 10 to 12 horsepower, though this is a matter which the individual owner is best able to settle for himself. Enough power should be given her, however, to drive her into a head sea, remembering that a wide, flat boat such as this drives hard under these conditions. The aperture for the propellor is oval in shape, and is cut entirely from the deadwood without in any way weakening or impairing the efficiency of the rudder. All engine controls are carried to the steering wheel, where they can be handled by one man.

The steering gear should be a screw gear, Edson preferred, though a quadrant gear will answer, if desired. Her deck fittings are placed with an idea to convenience and easy handling. The jigger mast is stepped as far forward as the steering gear will allow, and is well stayed with a strut stay on the forward side leading to deck. The importance of a well stayed jigger cannot be overestimated. There is a gypsy windlass forward, and hawse pipes are shown in place of chocks on the rail. The halyards lead to a pinrail around the mast. Rigged in this way, two men should be able to handle her with the greatest ease at all times.

Taking it all in all, she is an able little craft, with a maximum amount of comfort and with ability to meet anything she should be called upon to face.

The next plans in this series will be of a 22-foot combination sail boat and launch for use in shallow water. This is not an out-and-out sail boat with auxiliary power, but is a sucessful combination of the small launch and the centerboard sail boat, for the man who wants power and yet does not want to give up sailing entirely

The Carburetor; Its Function, Care and Adjustment

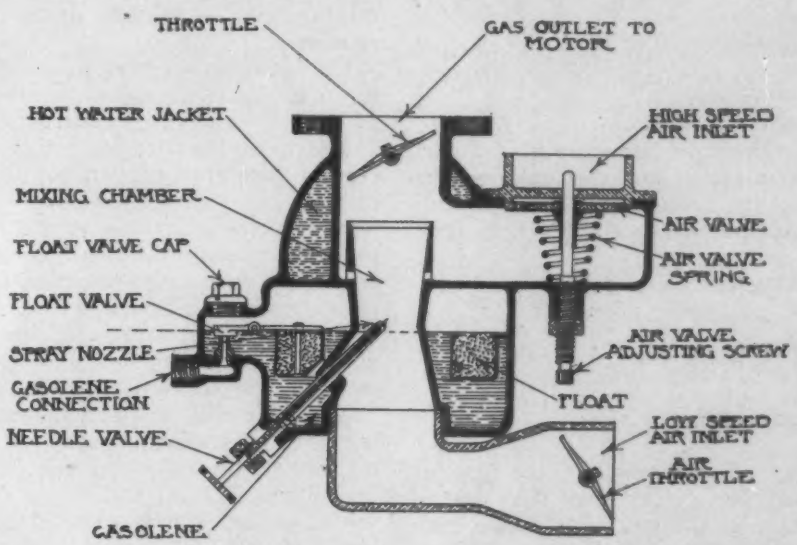
The Relation Between Motor and Carburetor. Mechanical Features that Interfere with good Carburetion. Carburetor Troubles, Symptoms, Causes and Remedies

By A. L. BRENNAN, JR.

THE fundamental features of efficient carburetion are extremely simple, although not a few of the unitiated consider a carburetor a most mysterious appliance. In point of actual fact, a carburetor is a device of simple design and construction which transforms a liquid fuel into a highly combustible gas. Many have an erroneous idea in regard to the method to be pursued in order to bring about this change. They know that a gas engine is a prime mover—that is, a self-contained, power-generating unit considered at large. They look upon a carburetor in much the same light. This is altogether wrong, for the action of the carburetor is entirely dependent upon the efficiency of the mechanical parts of the motor, as will be explained.

Carburetors are now manufactured in a great variety of designs, but, at the same time, they all work on the same principle, and so the general design and action of their respective component parts are very similar. The majority of the present-day carburetors are of the float feed type, the chief advantage of this type lying in the fact that the amount of gasolene allowed the mixing chamber remains absolutely constant, irrespective of the height of the fuel supply in the tank.

Some time ago, when many small motors were fitted with mixing valves, repeated adjustments were necessary, according to the pressure of the fuel supply, and this not only resulted in considerable trouble, but not infrequently quite seriously impaired the motors' efficiency. However, this drawback has been entirely eliminated on these later models, and, in fact, one adjustment now not only allows easy starting, but a wide range of speeds as well.



SECTIONAL CUT OF TYPICAL FLOAT FEED CARBURETOR

In order that the inexperienced may better understand the relation between motor and carburetor, I am going to say a few words on the cycles of a gas engine, which are:

1. Suction stroke.—Introduction of fresh air.
2. Compression stroke.—Compression of gas.
3. Power stroke.—Expansion of gas.
4. Exhaust stroke.—Removal of by-products of combustion.

These four conditions are necessary in all gas engines, irrespective of whether they operate on the two or four-cycle principle. The principal difference between a two and a four-cycle motor lies in the fact that the above operations require one turn of the crankshaft on two-cycle motors, while on engines of the latter type two turns are necessary.

Motors operating on the two-cycle principle draw the gas generated at the carburetor into the base by the up stroke of the piston, which induces a partial vacuum in base. On the return stroke the gas that has been drawn into the base is held by ports being closed or else by suitable check valves and compressed to 15 or 20 pounds per square inch. When the piston has nearly completed this stroke ports and passes are opened and the gas is forcibly admitted to the cylinder, where it comes in contact with a plate on top of the cylinder which gives the in-rushing gas a whirling motion which produces a scavenging effect on and expels the by-products of combustion of the previous power stroke through the exhaust port. The piston returning, the compression stroke is in order, and then the working cycle. It is realized from this, then, that the compression and the base suction stroke take place at the same time, and that the admission of fresh gas and exhaust of old gas take place at approximately one position of the piston; hence the four operations take place in one turn of the crankshaft.

On the other hand, each of these four operations is governed by a complete stroke of the piston on four-cycle motors the gas being admitted directly into the cylinder.

Therefore, it should be realized that, in order to have good carburetion, the mechanical features of the motor which govern compression will have to be in order, for the reason that if a motor lacks compression the vacuum pulling power of the cylinder will also be deficient, this latter point holding especially true of four-cycle motors, due to the fact that the gas enters the cylinders direct from the generator.

In regard to two-cycle motors, low compression can be taken as a positive indication of impaired carburetor efficiency; but, at the same time, it must not be conceded from this that if the compression is high good carburetion should result, for it may be that the base of the motor being not perfectly gas-tight will result in part of the volume of gas compressed in the base being lost and will also allow a certain amount of air being drawn into the base during suction stroke, producing a thinning-down process to the contained gas, thus lowering its efficiency, though not necessarily to any great extent.

In regard to the correct adjustment of a carburetor it is not feasible to lay down any hard-and-fast rules, for the variations that are necessary on duplicate motors equipped with similar carburetors quite preclude such a possibility. However, in point of actual measurements it has been found that one part gasolene to sixteen parts air is approximately the correct proportion, although some authorities claim that this allowance is considerably out, for the reason that during the past few seasons gasolene has deteriorated to a certain extent—that is, its specific gravity has changed until at the present time gasolene that is obtained in certain localities is so "heavy" that it is extremely hard to vaporize, and, in order to derive good results from its use, it is necessary to resort to artificial means of heating it.

However, such marked progress has been made during the past few years toward higher carburetor development, and, consequently, efficiency, that, considering the matter in a broad way, the power of the average motor has not only been retained, against the decreased natural power of gasolene, but, in most instances, the power has been increased. Hence operators should not be alarmed by the continued harking on the value of gasolene.

Some carburetors are fitted with two valves—i. e., needle valve, for controlling the amount of gasolene allowed, and air valve, for governing the air supply; while on others the mixture is controlled by the needle valve only, the air supply being taken care of automatically.

To adjust a carburetor having both air and needle valves the first step is to regulate the tension on the spring governing the

air supply to a moderate degree. This is done so that the pistons will pull a good vacuum and thus induce a good mixture of suitable volume. If this adjustment is made too strong, the air supply may be reduced to such an extent that the volume will result in low compression, and, consequently, impaired efficiency. On the other hand, if an over-abundance of air is allowed, irrespective of the amount of gasolene fed, faulty carburetion will result and the motor cannot develop its maximum power. It must not be taken from this that a carburetor can be adjusted with the motor idle, for this is quite out of the question; and an operator should merely endeavor to get an approximate adjustment that will keep the motor in operation until a better regulation of the valves can be had.

Most carburetors work best with the needle valve opened from one to one and a half turns, and so if the needle valve is opened about one turn in most cases the motor can be got into operation readily. The most emphasized symptoms are usually in order at this stage of adjusting a carburetor—i. e., symptoms indicating weak mixture:

1. Failure to pick up cycle.
2. Back-firing: (a) Base or carburetor explosions on two-cycle motors. (b) Explosions in intake manifold or carburetor on four-cycle motors.

Symptoms denoting over-rich mixture:

1. Failure to start.
2. Sluggish power impulses or stopping.
3. Explosions in exhaust or popping sounds.

We will first consider the adjustment and operation of a carburetor with its component parts in repair and then take up the other troubles. Now suppose that the foregoing preliminary adjustments have been looked to and the usual steps taken to start the motor—i. e.,

1. Seeing that valves controlling circulating water are open.
2. Gasolene valves at tank and carburetor open.
3. Lubrication adjusted and feeding.
4. Ignition retarded and switch in place.
5. Clutch in neutral position.
6. Flood carburetor, open throttle half way.
7. Crank.

Suppose when the motor is cranked over two or three times it fails to pick up its cycle, you may feel certain that it is due to lack of gasolene, and so in this case it is advisable to prime each cylinder and again crank. If at this period the motor picks up its cycle for one or two revolutions, but stops, accompanied by sharp back-firing, the mixture is undoubtedly too weak, and more gasolene should be allowed. If the mixture is only slightly weak the motor may remain in operation, and it should not be stopped to further the adjustment. On the other hand, if the motor fails to start after being primed, or starts and stops in a sluggish manner, this invariably indicates an excessively rich mixture, and, consequently, the supply of gasolene should be reduced at needle valve, additional air allowed, or both.

If a carburetor is so adjusted that the motor will operate in a regular manner while running idle, but back-firing takes place when the working load is applied, the mixture is too weak, and, therefore, a carburetor should receive its final adjustment when the motor is pulling its maximum load at a low speed, for at such times it is of the greatest importance that the motor should be kept in operation—i. e., going alongside of docks, etc.

Nearly all modern carburetors have a very wide scope of speeds on a single adjustment of the needle and air valves. In most cases this is taken care of by the auxiliary air valve, which is governed by a spring of a certain tension. The strength of this spring is carefully determined, so that when the motor requires an increase in the air supply to be in proportion to the amount of gasolene used the auxiliary air valve will open just enough to allow the required volume of air to enter the mixing chamber. Thus it is seen that the timing and opening of this secondary valve are directly controlled by the speed of the motor—that is, by the vacuum produced by the piston; for as the engine's speed is increased there is a greater piston displacement to be filled, and, therefore, it is necessary to supply a greater volume of air to adequately meet these demands and maintain a uniform mixture of high efficiency at all speeds without further adjustment.

There are some carburetors on the market which have several jets for controlling the gasolene supply, which are, in turn, automatically controlled by the speed of the motor and do not require adjustment. In fact, some carburetors resemble a carburetor within a carburetor, the chief purpose of these latest generator appliances being to maintain highest efficiency coupled with economy. Some of these types require several adjustments, needle valve, air and auxiliary air supply, while on others only the regulating of the needle valve is necessary.

On some motors the auxiliary air supply is admitted to the intake manifold between the carburetor and motor, this system being mostly used on heavy-duty slow motors and giving good results. When adjusting carburetors on this type of manifold, have the auxiliary air valve closed. There are cases, however, when it is advisable to have the valve partly open when setting the needle valve, and the value of this operation lies in the fact that if a strong mixture is necessary to start on when the motor is cold it can be had by closing the auxiliary air supply, and not by readjusting the needle valve. Then when the motor has picked up its cycle and artificial heat is being supplied the carburetor, the mixture can be thinned down by resorting to the auxiliary air regulator.

On some carburetors provision is made for the setting of interior auxiliary air valves, while on others this detail is taken care of in their design and construction.

Nearly all troubles pertaining to gas engines are recognized by certain symptoms of varying magnitude, and those having to do directly and indirectly with efficient carburetion are, in the most part, readily discernible, providing an operator will study his motor and become, first of all, conversant with the why and wherefore of its operating principles, for he will then be in a position to take immediate advantage of any trouble symptoms. It must be remembered that certain engine troubles have similar symptoms for different troubles—i. e., skipping may be due to water in the carburetor or to a loose wire in the ignition circuit, etc.

The following troubles, however, have only to do with the carburetor and fuel supply. If an engine refuses to start, any one or more of the following may be responsible (ignition system being all right):

1. Gasolene supply exhausted. 2. Tank air-locked. 3. Gasolene shut off. 4. Water in gasolene. 5. Carburetor out of adjustment. 6. Clogged gasolene strainer. 7. Clogged needle valve. 8. Stale gasolene in strainer. 9. Gasolene of too low a test to vaporize easily. 10. Carburetor or motor flooded. 11. Leaky metal float or fuel-soaked cork.

Of course, it is only a small percentage of the foregoing that give trouble from time to time, and the special symptoms that are manifest indicate the true troubles. For instance, suppose the motor fires the priming charges in a powerful way but stops in a sluggish manner. This indicates an excess of gasolene, as already described, and so on.

If a gas engine operates in a regular way, but does not develop its maximum efficiency, it may be caused by a poorly proportioned mixture. If a gas engine operates in an irregular manner, the trouble in many cases can be traced to an accumulation of water in the carburetor, which should be drained off, and if this cannot be done, then the "dome" should be removed from the carburetor and the water and sediment sucked out with the oil gun.

When a motor slows down and stops, accompanied by back-firing, it denotes a shortage of gasolene at the carburetor, which may be caused by supply being exhausted, or "pipe line" choked up, or accumulation of dirt at needle valve.

Sudden stopping without warning is sometimes traceable to lack of gasolene.

Explosions in intake manifold and carburetor, and in rare instances in exhaust or silencer, indicate a weak mixture, but usually popping sounds in exhaust point to an overrich mixture.

Knocking is not infrequently induced by an overrich mixture. An overrich mixture is not only indicated by an apparent lack of power, but is oftentimes perceptible by the nature of the exhaust-

i. e., black smoke, which quickly disappears, being a symptom of a decidedly rich proportion. Although no combustion is complete, still a perfect exhaust from a gas engine should be invisible and free from any smell, so that if the exhaust is foul-smelling it is another indication of an overrich mixture.

During extremely cold or damp weather difficulty may be experienced when starting, and this is due to the fact that the grades of gasolene now on the market are less volatile than formerly, when the specific gravity was decidedly less. This point, taken in conjunction with the fact that cold or damp air will not "take up" gasolene easily, it naturally follows that in some cases the gasolene supply at needle valve will have to be increased.

In extreme cases when motors fail to pick up their cycle, due to intense cold or heavy, foggy weather, starting can be greatly facilitated by placing lumps of waste on the carburetor that have been dipped in hot water.

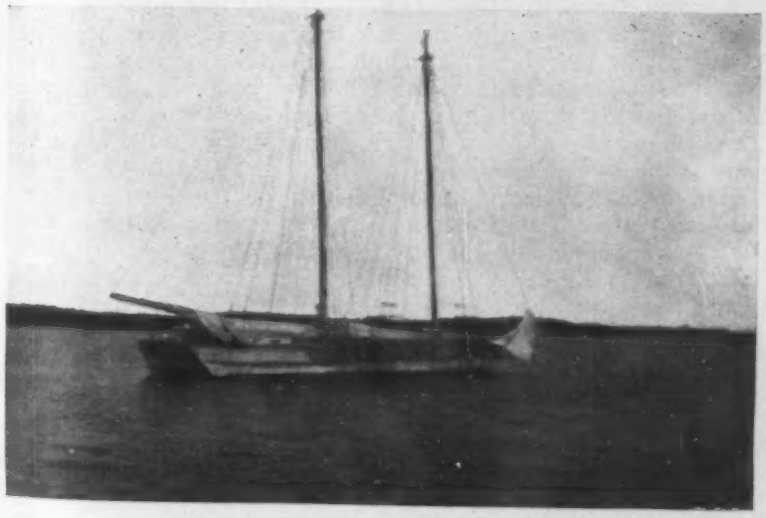
Oldest American Vessels

A Few of Them Are Well Past the Century Mark and Still in Good Condition

By D. A. WASSON

THE scrap heap claimed the oldest vessel on the Great Lakes when the little schooner Lydia E. Raesser went out of commission at Marquette, Mich., recently. She was 65 years old, but there are still in service a few products of American shipbuilding which make the ancient Raesser youthful by comparison.

At the age of 123 years, the 99-ton Danish schooner Vigilant still makes voyages across the Atlantic with the regularity of clockwork. The Vigilant was built at Baltimore in 1790, but has flown the Danish flag for the greater part of her career. She is owned at St. Thomas, in the Danish West Indies. On the western passage her little hold is crammed with Cadiz salt to cure the thousands of quintals of fish which are yearly caught on the Grand



THE NEW BOXER, BUILT IN 1819, AND FOR MANY YEARS SAILED SINGLE-HANDED BY A 70-YEAR-OLD SKIPPER

Banks and dried on the bleak and stormy shores of Newfoundland and Labrador. East-bound, she takes back the salted fish for the Latin races of the Mediterranean and the Celt and Scot of more northerly latitudes. South America, too, is sometimes her destination with the same sought-after freight.

The Vigilant is but a unit in a large fleet of equally tiny craft in the same trade. Most of them are Newfoundlanders, and, without doubt, they hold what may be called the lightweight long-distance championship of the world's sailing vessels. In no half-hearted way does this diminutive veteran go about her business. In command of Captain Jacobsen in the fall of 1911, she made the passage, deep-loaded, from Black Tickle, Labrador, to Queenstown, Ireland, in 17 days. The schooner yacht Atlantic, of Bridgeport, Conn., was only five days' less time in establishing—in ideal sailing trim, of course—a transatlantic record for windjammers. She went from Sandy Hook to Land's End, England, and at the time—1905—was racing for the German Emperor's cup.

The great quantities of salt carried by the Vigilant no doubt have proved for her an elixir of life. New wooden vessels, as is well known, are habitually "salted" between planking and ceiling before they leave the builders' hands, and the preservative qualities of the salt no doubt prolong by years the lives of the majority of our old coasters.

The oldest merchant vessels in the world are countrymen of the Vigilant. They are, and since time immemorial have been, engaged in the Baltic Sea salt traffic, which has been almost a world-long birthright of the Norsemen. Some of them are many years older than the Vigilant, and the majority of them considerably smaller. The Vigilant, however, is, so far as known, the oldest American-built craft in existence.

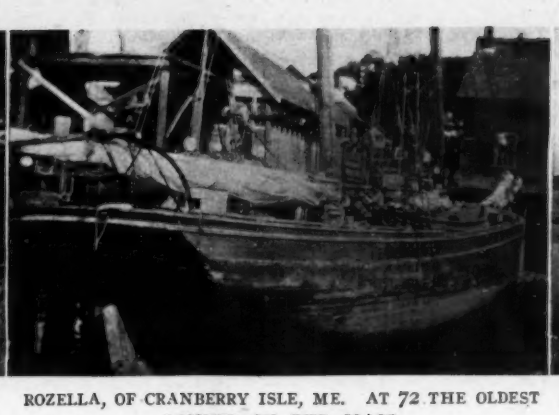
The exploits of the schooner Polly are as well known to the average seafaring man as the events of the wars with Britain. How she was launched at Amesbury, Mass., in 1805 under sloop rig; how she was fitted out as a privateer in the War of 1812, took prizes, and was at length made a prize herself; how she was "knighted" for her services not long ago by the Daughters of the American Revolution, and how she is ending her days in leisure as the cherished property of Mr. Alfred Johnson, of Boston, Mass., are the best-known events of her checkered existence.

But how she was hammered by a gale which caused her to strand and sink, thereby spending the winter of 1890 under water and ice at Kittery, Me.; how she missed wreck by a hair's breadth in the fog at Rye, N. H., in 1905, and how she survived several fires in the course of a long employment in the hazardous Rockland lime trade, are little known chapters in her latter-day career which make it still more amazing that she has for 25 years maintained the honor of being the oldest merchant vessel under the American flag.

Photo by G. S. Hudson

OLD SCHOONER HIRAM (IN FOREGROUND), STILL CARRYING LUMBER AT THE AGE OF 94 YEARS

LOELLA, OF PORTSMOUTH, 63 YEARS OLD. IN HER PALMY DAYS SHE MADE THE RUN FROM DEER ISLE TO BERMUDA IN 77 HOURS



ROZELLA, OF CRANBERRY ISLE, ME. AT 72 THE OLDEST BANKER ON THE COAST

AMELIA ANN, A 50-YEAR-OLD OYSTERMAN, WHICH LAID HER BONES ON WILLOUGHBY SPIT

Fortunate it is that the Polly is at last in good hands, and equally so that the Mary, which is only six years younger, is the property of Rear-Admiral Robert E. Peary, the discoverer of the "top of the world." As both are now kept solely as curiosities, while their aged sisters across the big pond are still hard at work, it is likely that they will soon hold the honors. The Mary is of the almost extinct "pinkey" or sharp-stern type, and was built at Portsmouth, N. H., in 1811. Admiral Peary discovered her at St. George, Me., five years ago, and forthwith promoted her from the prosaic lobster business to a well-earned old age of idleness. He has recently had her repaired at Harpswell, Me., and she is to-day to be seen on her usual moorings at her owner's summer home at Eagle Island, Casco Bay.

Only two years more youthful is the schooner Good Intent—quaint old name!—which first saw the light of day on the Fore River, at Braintree, Mass. Less fortunate than her companions in antiquity, she has to burden her aged hull, as she has for a century past, with ponderous cargoes of granite, lumber and baled hay on the waters of Penobscot Bay, Me. The Good Intent has changed hands four times in the past eight years, having hailed successively from Bucksport, Belfast, Vinal Haven and Deer Isle. When the writer was aboard her at Bucksport several summers ago her skipper proudly asserted that her hull was sounder than that of the Polly, and that the old age pennant would be hers ultimately. At that time she was buried under a staggering deckload of hay, and loaded as deep as she would have been in her youth.

For her present staunch condition the Good Intent has to thank her late Belfast owner, L. F. Gilchrist. His shipyard was abandoned last summer, and some of the last work done there was to put the old packet through such a course of sprouts in the way of slicking-up as she had probably not seen since 1813.

Another archaic sailer is the lumber schooner Hiram. Having reached the age of discretion at 94, this Maine coasting schooner is showing herself more discreet than valorous by turning tail to further hard work and enjoying the fruits of nearly a century of drudgery. While she is not strictly to become a yacht, her career henceforth will be one of slothfulness as reckoned by her previous standard, with a little money-making on the side—providing her new skipper's plans materialize.

The Hiram was recently bought by Capt. J. A. Orne, of Calais, Me. He has rebuilt her largely during the past year, and says he will start next fall on an easy-going trip around Cape Horn, reaching there in plenty of time to exhibit her at the Panama-Pacific Exposition at San Francisco.

The Hiram, however, is already a celebrity. In her time she has made fully a thousand trips from Maine to Boston and other ports along the New England coast—and hardly anywhere else, though imaginative newspaper reporters have recently credited her repeatedly with being built for the East Indian trade. Like many of her younger contemporaries, the Hiram was a topsail schooner when new, and when she goes on her long jaunt to the Pacific her skipper proposes to let her sport this picturesque rig once more. Although it is still seen to a small extent in the Maritime Provinces, Capt. Orne is right in expecting that the practically extinct outfit will prove a drawing card. Indeed, her high-pooped, apple-bowed hull represents practically the first word in the marine architecture of the American Republic.

The ancient Hiram now looks as fresh as a June morn, and even before her late rejuvenation it is said that the sturdy white oak planks in her bottom were as sound as when the honest master-builders of Biddeford, Me., drove the treenails, away back in 1819. She needed little but re-topping; and though for two years she had been hauled up on an island near Red Beach, she was not greatly dilapidated when Capt. Orne picked her up.

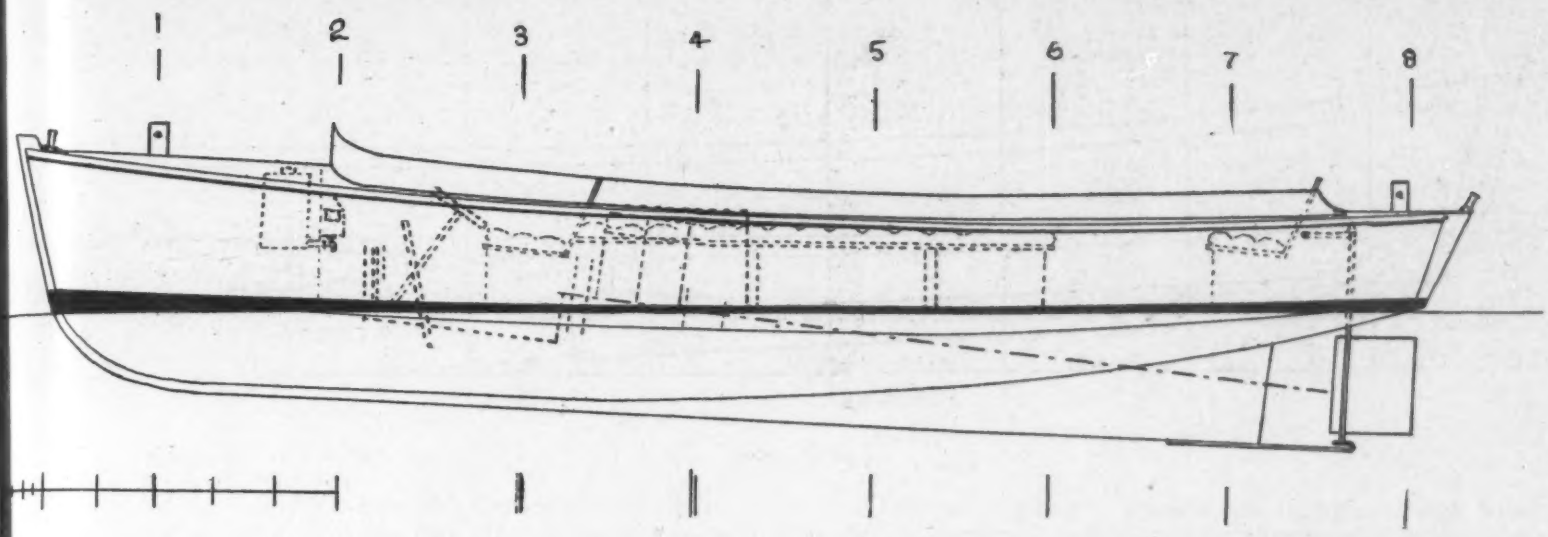
Next in order is the schooner New Boxer, of Rockland, Me., built at Hampton, N. H., in 1819. Although there is hardly a flake of paint on her storm-washed sides, her aged skipper, Capt. Reuben Candage, will attest that she is in good condition and fit for years to come. Despite his more than three-score-and-ten, Capt. Candage has, at times, sailed the Boxer single-handed. The New Boxer was rebuilt at Wells, Me., in 1845, and extensively repaired in 1883, so the aptitude of her odd name is easily apparent—to some.

A queer coincidence befell the New Boxer in the fall of 1910. On two consecutive trips she met heavy weather offshore and sprang a leak, reaching Portsmouth harbor each time in a waterlogged condition. Such reverses, however, did not seem to interrupt her activities in the lumber trade until this last winter, when she was wrecked on Isle au Haut, Maine, her ship's company of one having been saved.

Had the bark Success been built in this country her name would have been at the head of the list—and deservedly. She now flies the American flag, and she was built in 1790; but it was in the East Indies that she made her début. The Success is the last relic of the days when Great Britain sent her subjects to Australia for offenses ranging from the theft of a loaf of bread upward, and her ancient sides have probably encompassed more tragic horror than any other vessel afloat. The grisly convict ship, better known as the "Floating Hell," has been bought by an American, and, as this is written, is being exhibited in this country.

So long has the Polly held the center of the maritime stage that the very few other vessels which have reached the century mark have slipped out of existence unhonored and unsung. In reality, their sturdy builders are more deserving of credit than those of our beloved Old Ironsides, which has enjoyed her phenomenal lease of life solely through being government property. At the age of 114 the Constitution is, except for the starboard mizzen topsail brace bitt, an entirely different ship from the one that kissed the waters of Boston harbor in 1798. Maritime law, however, says that the Mary Ann, repaired all out of the old into the new, is still the Mary Ann. Even the Polly was so thoroughly rebuilt in 1864 that it is doubtful if much of the original ship remains.

Credit is certainly due the defunct builders of the bark True Love, which was built at Chester, Pa., in 1764, and ended her days as a coal hulk on the Thames River at London in the early nineties, having beaten the coddled Polly by a score of years. Such handiwork as that of her builders made the name of our merchant fleet of old as much the marvel of the world as our latter-day fleet is a by-word and a reproach. The whaling bark Rousseau, launched at Philadelphia in 1801, was broken up at New Bedford, Mass., on the threshold of her centenary. The little schooner Manchester, built at Essex, Mass., in 1780, is recalled as having been actively engaged in carrying cordwood from York, Me., to Boston when much over the century mark.



Building a 24-foot V-Bottom Open or Cabin Boat

By F. R. WATERMAN

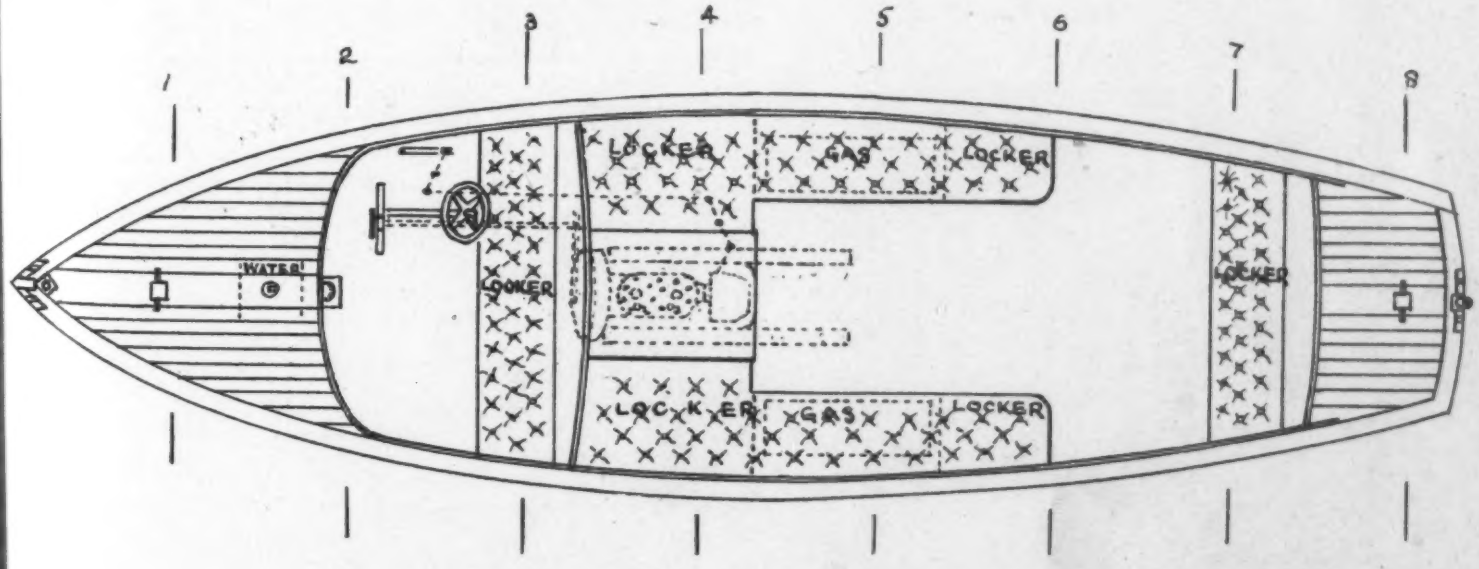
WITH the increasing popularity of the motor boat there is a constantly growing demand for a moderate-sized, able and roomy boat of such simple construction that she ay either be built by the average amateur builder, or, if this is ot desired, can be turned out by a professional builder at a mini- um cost. The type of boat that best fulfills all these requirements undoubtedly a V-bottom boat; and the hold that it has taken popular favor both as an open boat and, latterly, as a cabin uiser, is a tribute to its good points. Properly designed and ell built, the V-bottom boat is an ideal small craft, especially here cost is an item.

For three seasons I cruised with my family on a two-weeks' acation every year in an open boat, and so knew its possibilities. owever, we soon outgrew the open boat, as practically every oatman does, and we finally built a 27-foot cabin V-bottom oat which better suited our needs. So, in designing this boat for e readers of YACHTING, I have borne in mind this fact and have signed her so that, while she can be built as an open boat, she n be changed at any time to a cabin boat of the raised deck type ith very little additional labor, and without spoiling her looks the least.

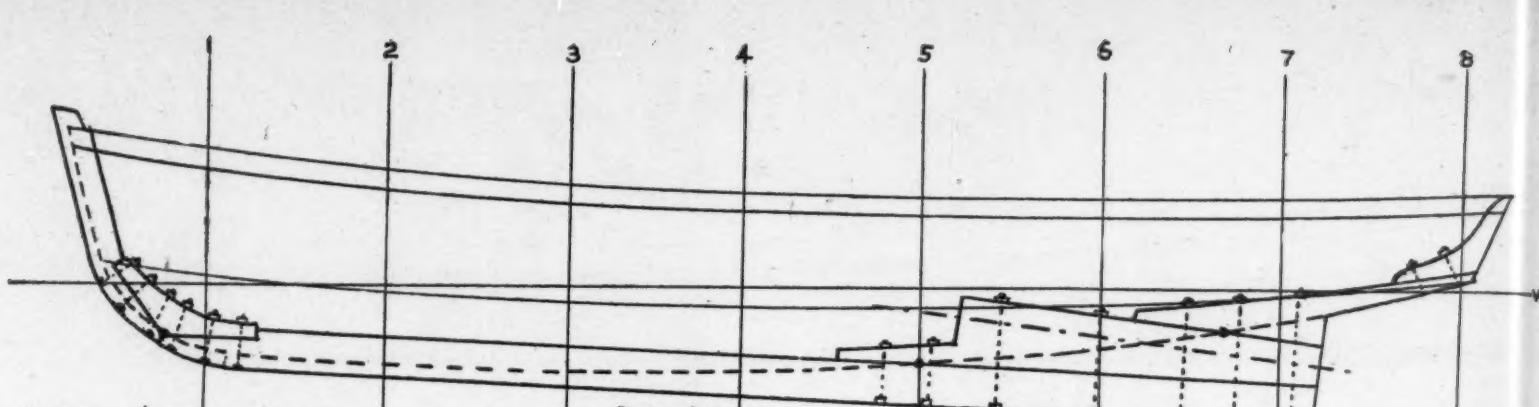
The dimensions of the boat as designed are: Length overall, feet 6 inches; beam at waterline, 7 feet; draft, 2 feet 3 inches. he drawings show her built with both a round chine and a sharp corner, so that the prospective builder may take his choice. The round chine looks somewhat better and gives her the appearance of a regular round bilge boat above the water. With an 8 to 10 horsepower engine turning a 20 x 24-inch 3-bladed propeller, a speed of approximately 9 miles should be obtained.

To describe the boat briefly, taking it for granted that the open boat will be built first, the plans show that the first 5½ feet are taken up by the forward deck, under which is a water tank with faucet coming through the bulkhead into the cockpit. Then follows the helmsman cockpit, 4 feet long, with a lazy back seat at the after end, 5 feet 8 inches wide. All controls lead to the auto steering wheel or on the ceiling at the side of the boat. Batteries, etc., are in a locker under the seat.

Abaft of this cockpit comes the engine, practically boxed in, with a locker on each side, making it practically a separate compartment. This engine box is slightly higher than the seats aft and on each side of it, owing to the height of the engine. Gas tanks are located under the forward end of the side seats and have a bulkhead at each end of them. They are piped and valved so that either or both can be connected with the carburetor. Aft of the side seats is an open space 2 feet 9 inches long and 5 feet 6 inches wide for chairs, followed by a stern cross seat with lockers under, followed by the after deck with a Sampson post for towing coming through it. The boat is well supplied with lockers,



ACCOMMODATION PLAN OF OPEN BOAT



SET-UP PLAN

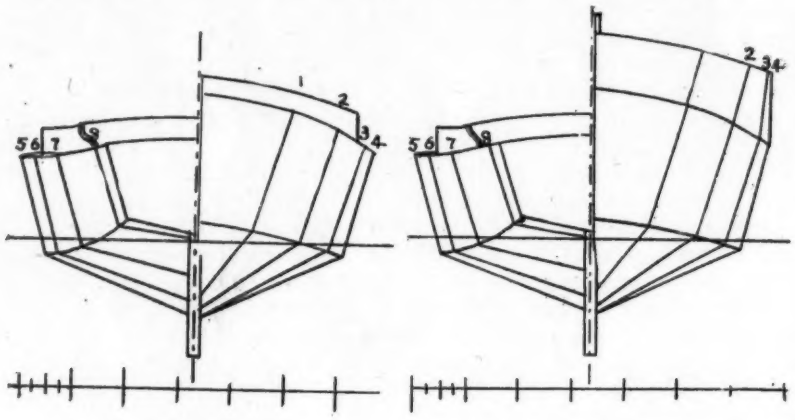
which is a necessity if any cruising is going to be done, and, if desired, these seats can be made to extend for berths. The cabin is surrounded by a high wash rail or combing.

I am not going to describe in detail how to build this boat, as numerous articles which have appeared recently in YACHTING and other magazines have covered the method of building this type of craft. The drawings herewith are very complete, and with the measurements given on them and in the table of offsets, the boat can be gotten out and put together by an amateur builder that has had any experience at all, while the professional builder can do the whole thing from the plans as shown. I will, however, give some instructions that will be of great help in doing the work.

The first thing to do is to get out full-sized patterns of the different parts, molds, etc. To do this, procure some heavy wrapping paper and glue it together so that on it you can draw out full size the different sections of the keel as shown in the plan, the measurements of which are shown on the scale attached to each drawing in the article. The table of offsets gives the measurements at each station from one to number eight, as shown on the drawing, and also at stem and stern. From these the shape of the boat can be laid down on this paper or on a floor, but it is hardly necessary, as the molds can be gotten out for the stations selected, such as 1, 3, 5 and 7, by drawing patterns to the measurements given in the table of offsets or on the wrapping paper.

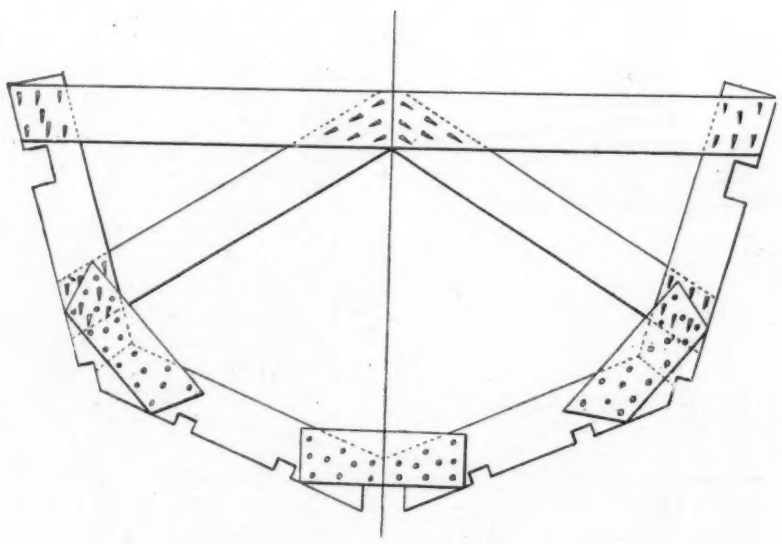
After you have gotten the keel out, which includes the stem piece, scarf, keel proper, deadwood, and horn timber, lay them together to see if you have them in the proper form and then send them to the mill to have them sawed out of three-inch clear oak. When these five pieces come back, lay them together and mark on them the points at which the half-inch galvanized carriage bolts come which are to fasten them together. These positions are shown in the set-up plan. Fit the joints to the scarf carefully, smearing the splice with white lead before putting in the bolts. The pieces should be clamped together with C clamps before boring for the bolts. It is well to give all parts of the keel a good coat of raw oil for preserving the wood. From the molds and drawings, templates can be cut to give the shape and depth of the rabbet line, which must be cut out from the stem and keel.

In the half midship section are shown two strips of oak, 1 inch by 5 inch, fastened on either side of the top of the keel so as to make a wider face to which to fasten the planking. The under part of this must be beveled to the angle of the rabbet. In setting up the keel, block up the lowest part at least two feet from the ground so as to give room to work under the boat when put



BODY PLAN, OPEN BOAT

BODY PLAN, CABIN BOAT



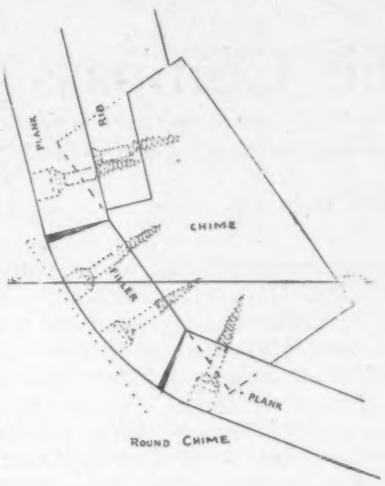
DETAIL OF MOLDS

HEIGHT.

STATIONS	Stem	#1	2	3	4	5	6	7	8
Top of Cabin Side	5'11"	5'7"	5'4"	5'-2"	5'-1"				
Gunwale or Sheer Line	5'	4'7"	4'3"	4'	3'10"	3'9"	3'9"	3'10"	3'11"
Chime	2'-7"	2'-4"	2'-1"	1'-11"	1'-10"	1'-10"	1'10"	2"	2'5"
Rabbel					8"	10"	1'1"	1'-7"	2'2"
Keel Bottom		10"	8"	6"	4"	3"	2"	0"	
HALF BEAM									
Top of Cabin Side		2'1"	3'	3'-4"	3'-5"				
Gunwale		1'-9"	2'-8"	3'-2"	3'-5"	3'-4"	3'-1"	2'-8"	1'11"
Chime		1'-1"	2'	2'-7"	2'-10"	2'-10"	2'-7"	2'-2"	1'-6"

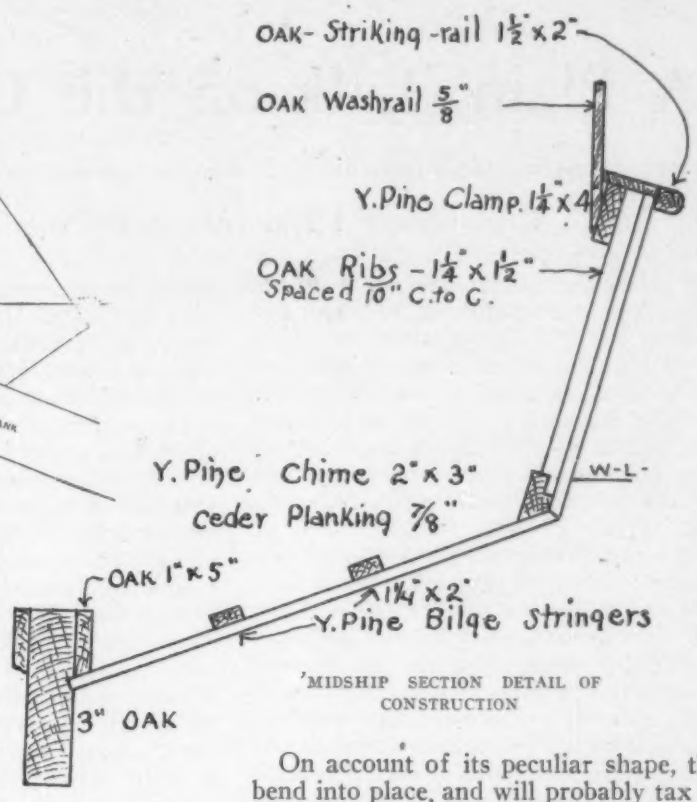
TABLE OF OFFSETS. STATIONS 3 FEET APART BEGINNING AT STEM
MEASUREMENTS ABOVE BASE LINE

ng on the planking. lock this up as shown the set-up plan so as get the waterline vel, the height to bot- m of keel from base es at the various sta- ons being shown in e table. Brace the el securely in place, ing scantling from or to stem head, ern, transoms, etc., r braces. You will so have to brace the olds very securely d clinch the nails, as own in detail draw- of mold, as they ve to stand a good deal of strain in the lding.



The stern is shown in the drawings as steam t in one piece, fastened to the horn timber h a hackmatack knee. A V-stern can be d if desired, but it is hard to get a tight joint his type, and while the bent transom is more rk, it makes a better job. Cut the stern rd roughly to shape at first, brace in place, after the molds are in and the battens ked around them from stem to stern, it can finished off to shape at the same time the boat is being faired

Be sure that the molds are fastened to the keel square and mb. They should be fastened securely in place, braced on er side from the keel, or by a thin strip of scantling stretched m stem to sern and temporarily nailed to the tops of the molds. u will want a batten at the sheer line and also at the chine piece. Fair up these battens carefully, and an hour or more spent in doing this work will be well repaid, as the looks of the boat depend upon having these lines and curves fair. Most home-made boats show that they were built by an amateur by the uneven sheer line. As the molds come to the inside of the planking, the clamp and chine piece must be set into them, as shown in the drawing, with their faces flush with the outside of mold. The frames or ribs from clamp to chine are halved at the lower end and mortised into chine, as shown. Where the clamps and the chine pieces meet the stem they should be backed up by a block of wood, to which they should be fastened, as well as to rabbet.



'MIDSHIP SECTION DETAIL OF CONSTRUCTION

On account of its peculiar shape, the chine is a hard piece to bend into place, and will probably tax your patience and strength. It can be pulled into shape, however, by making some tourniquets of strong rope and by turning up on these it can be pulled into place and fastened to stem and stern, and temporarily to the molds. Brass screw fastenings are best for the purpose. As the chine piece sets flush with the outside of the sternboard, fasten pieces of 2 x 3-inch stuff on the inside edge of the stern board into which the chine and stem piece can be mortised and fastened.

In the Next Issue the Details of Planking, Finishing, Cabin, etc., Will be Taken Up

A FISHING FLEET OF NORTHERN NORWAY ON THE WAY TO THE FISHING GROUNDS. BOTH IN RIG AND IN TYPE, WITH THE HIGH BOW AND STERN, THE BOATS BEAR A STRONG RESEMBLANCE TO THE VIKING SHIPS OF 1,500 YEARS AGO

A Plain Talk on the Compass

Part II. The Compass Binnacle and Its Attachments. Location of the Binnacle. Errors Due to Bad Placement

By ALFRED D'A. McNEVIN

IN order to navigate with safety the compass binnacle and its accessories must be given the same careful consideration and attention that the compass itself should receive, both with respect to its efficiency and also in placing it in position aboard ship. Let the space within a radius of eight or ten feet of the binnacle be a danger zone where magnetic properties and iron or steel articles of every description are forbidden while the vessel is under way. Also permit no one to carry articles of metal which may have a disturbing influence on the compass on their person in proximity of the binnacle.

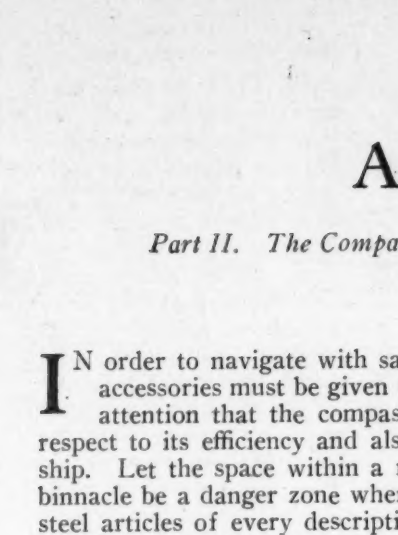
In one case on record, if it had not been for an accidental discovery, the nails in the captain's shoes might have led to the stranding of a large steel freighter navigating the south shore of Lake Superior not long ago. The captain was leaning back in his chair smoking, with his feet comfortably propped up on the binnacle within a few inches of the compass. This caused a deflection of the compass needle of three-quarters of a point for nearly an hour. Fortunately the trouble was noticed by the helmsman when the captain removed his feet and due allowance was at once made for the error in the ship's position. Numerous stories of this kind could be related to show the importance of carefully guarding the compass, but it is sufficient to warn navigators to be careful about what they may carry or place near the compass. Beware of tin megaphones, cans of brass polish, oil cups, tools, etc. Put all such in the lazarette or tool chest, where they belong. Tin is a bad disturbance and affects the compass at some distance.

No space should be left in the binnacle for articles of any description except the requisite parts of the compass compensating apparatus, and this should always be kept under lock and key.

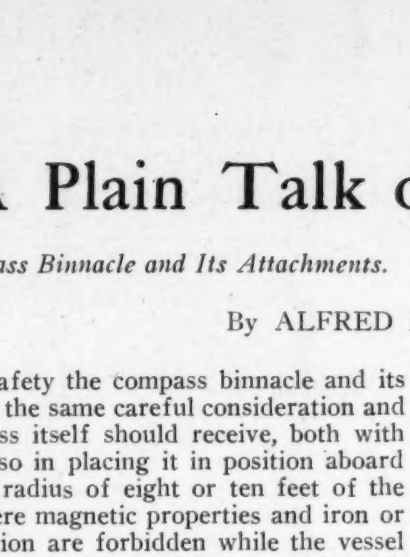
Great care should be taken, especially in wooden, home-made binnacles or compass boxes, to see that no magnetic material used in their construction or repair. The purest non-magne copper or brass should be selected and tested for all binnacles a their necessary appendages. Wooden binnacles should be ma of well-seasoned walnut or oak. Teak is better, as it is not apt to warp as other woods. Warping should be carefully guard against, as when a binnacle warps, cracks or loses its shape fr any cause, the position of the compensating magnets, if they attached to it, is altered with relation to the compass need and an error of the compass is the result, which I have known amount to as much as three and one-half degrees.

Compass binnacles are made in a variety of forms and si to meet the requirements of all classes of vessels from the smal to the largest craft afloat. Some are compensating and some not. By all means the most preferable and satisfactory recepta for a compass is a well-made metal compensating binnacle, so t the magnets for correcting errors of deviation can be prope manipulated when the compass is adjusted, and there is no dan of their being disturbed or displaced afterwards. Pedestal b nacles and posts without compensating fittings are most inc venient and undesirable in every way. It is a waste of money buy this type, especially in a power boat or auxiliary, and t are not worth the space they occupy on the boat. It's surely a to mar the appearance of a highly polished bulkhead, partition deck by tacking the compensating magnets to it where they are only unsightly but are continually in the way and are liable t lifted up or kicked out of position, or displaced in some way.

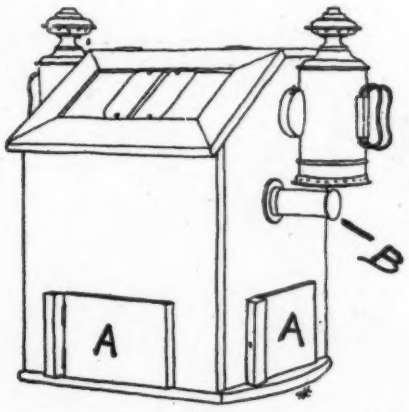
Either one of two things must be done to adjust a compass a pedestal binnacle. It must be placed close enough to a parti or a bulkhead to permit of its adjustment by tacking the ma to the partition, or very large magnets must be used if the binn is placed in an open space on the deck to which they have t fastened. Where there is only one bulkhead running and aft or athwartships, at least one vertical magnet must be u and as a rule this is not advisable. To adjust a compass it usu requires at least one magnet on each side of the binnacle an



Compensating Steering Compass Binnacle.—A, globe correctors for quadrantal deviations fastened on brackets to each side of the binnacle; B, slotted brackets for carrying quadrantal correctors; C, fore-and-aft and thwartship magnet compartments; D, hinged covers for magnet compartments; E, binnacle lamps.



Compensating Standard Compass Binnacle.—A, brass-covered globe correctors; brass chain boxes from 3 to 5 inches square are sometimes used as a substitute for soft iron hollow globes; cylindrical brass tubes are also employed, in which are inserted a number of short, soft-iron rods to minimize the deviation on the quadrantal points; B, brackets for quadrantal correctors; C, fore-and-aft and thwartship magnet compartment; D, hood with hinged brass cover over glass face.



Compensating Box Binnacle.—A, magnet compartments; B, brass cylinders for soft-iron quadrantal rods. A round brass binnacle top for a 5 or 5½-inch compass, with lamps or flange, for fixing on a cabin deck or stand, and with a square base to contain the adjusting apparatus, makes an excellent device for housing the compass where it is not convenient to place an ordinary high binnacle in front of the wheel.

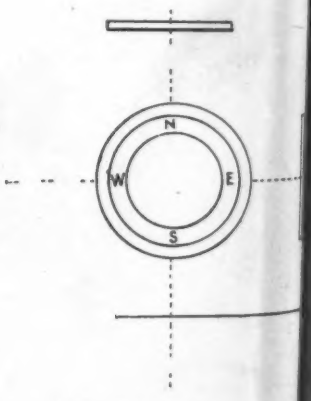


Figure No. 1, showing the the middle of the magnet s cupy.

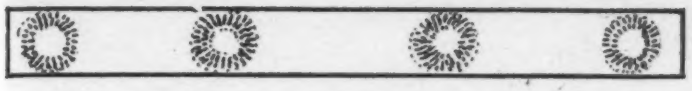


FIG. 3.—DEFECTIVE MAGNET, SHOWING CONSEQUENT POLES

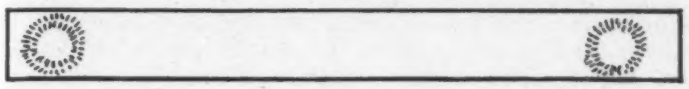


FIG. 4.—ORDINARY MAGNET, SHOWING TWO POLES

FIG. 2.—SHOWING THE POSITION OF THE QUADRANTAL GLOBES, CYLINDERS, OR CHAIN BOXES, WITH RELATION TO THE LEVEL OF THE COMPASS CARD

least one placed horizontally or athwartships. If you must have some combination pedestal arrangement for the steering gear, the compass and the engine control, be sure and make some provision in placing it for the adjustment of your compass; otherwise you will discover that a troublesome and perhaps expensive omission has been made in the arrangement of your equipment. This is a certainty if you are going to navigate in waters where you require a compass at all.

In the selection of a compensating binnacle it is always advisable to make a thorough examination of its fittings, to see that they are efficient in every respect. Imperfect magnets and correctors are worse than useless, and are altogether too common for general safety. This is no doubt due to the haphazard manner in which the binnacle is selected.

The quadrantal correctors (the globes or cylinders to overcome the quadrantal deviation which are placed on brackets on either side of the binnacle) should be tested for retained poles. This should be done on shore at a place where there is no local attraction. The method of doing it is this: The lubber line of the compass is turned to north. One corrector at a time is placed with its center on a level and exactly on a line at right angles to the compass needles. The corrector should then be slowly revolved in a horizontal direction. If it is magnetized only by induction, as it should be, the poles of the corrector will be continually parallel to the north and south line of the compass needles and no deflection will be noticed. If it has hardened and become permanently charged with magnetism, its poles will approach and recede from the compass and cause deflections in the needle, showing that it is useless as a quadrantal deviation corrector and must be rectified or discarded.

Care should be taken in making this test that the corrector is revolved on its axis and not shifted nearer to or further from the compass needles while doing so. To test it on board, the ship's head must be steadied for several minutes on north or south (magnetic), and first one and then the other corrector should be shipped on the brackets and revolved as before for the same purpose. Should either one be found defective it may be remedied by slightly heating or by tapping it gently with a hammer, or rolling it around some hard surface for a short time.

The quadrantal correctors should be carefully placed on each side of the binnacle on suitable brackets for regulating their distance from the center of the compass. They should have about a six or eight-inch field in which to move. Their centers should be as nearly as possible on the same level as the compass needle, so that a horizontal athwartship line through the center of the card also would pass through their centers. (See Fig. 2.)

Where chain boxes are used for correctors they should be fastened to the binnacle in the same position as the globes are fastened, and the top and bottom of the boxes should be an equal distance above and below the plane of the compass card, so that when the chain is placed in the box it may be so distributed as to occupy that position also with relation to the card.

A good grade of iron jack chain is equally as good as the globes or cylindrical correctors for treating the quadrantal deviation. It can be taken out of the boxes and annealed more readily and with less trouble than the globes, and is less expensive if a new set is deemed advisable as a substitute for the old one. The practice in the navy is to anneal the soft iron correctors by boiling them in oil occasionally. This method can also be followed in treating the Flinders rod where it is in use. It has the effect of dispelling any magnetic permanency it may have acquired by reason of its proximity to the compass needles or otherwise.

A Flinders rod consists of a rod of soft iron about six times the length of the compass needles and cut into several short lengths, varying in size. It is placed vertically in a brass tube directly in front of the compass binnacle with its upper end slightly higher than the compass card. Its purpose is to minimize automatically that part of the semi-circular deviation due to the induction of magnetism in vertical soft iron in the boat as a change of latitude takes place. It is a very practical and useful device in more ways than one and should be more widely used for adjustment than it generally is.

The brackets or rods or whatever manner of contrivance may be furnished with the binnacle for securing the permanent magnets or semi-circular correctors should be placed in such a position that the middle of the magnet rests directly on the extension of a line drawn from the exact center of the compass through the fore and aft and athwartship lubber points. Magnets placed "end on" or "vertically" on these lines are not advisable. They cause unsteadiness of the card and produce deviation with the rolling or listing of the vessel. (See Fig. 1.)

To test the permanent magnets to see that they are true to their color, present one pole and then the other to the north point of any compass, holding them at right angles to the needles while doing so. Try them for cracks, or flaws, or double poles by laying them on a flat surface and covering them with a sheet of paper; sprinkle iron filings over the paper; if the magnets are perfect the iron filings will form feathery curves about the two poles near their ends; if the magnets are imperfect intermediate poles will be formed which will indicate a flaw, and they are therefore useless for adjusting a compass. (See Figs. 3 and 4.)

All modern binnacles for iron or steel vessels are fitted with a heeling error corrector for correcting the error of the compass caused by the listing of the boat. This consists of a brass tube in the binnacle directly under the pivot of the compass, which extends from the top to the bottom of the magnet compartment and contains a round magnet of the ordinary adjusting type about equal in size to the length of one of the compass needles. A chain is attached to the magnet at its upper end, so that it can be raised or lowered, as the case may require to correct the heeling error. As a general thing a powerful magnet is not necessary for this adjustment, and, as a rule, on a wooden vessel they are not required at all. There are cases in a wooden hull where they are needed, however, such as where some vertical attachment in the vessel is near enough to the compass to produce a disturbance when she takes a list or heels over.

The estimated amount of the heeling error in a steel hull is supposed to be about two degrees for every degree of heel on the point where it reaches its maximum amount. The writer believes, however, that there is no safe rule for estimating the amount of error, and that it should be determined for each individual ship by actual observation. This has been my experience after carefully testing hundreds of cases in the last twenty-five years.

In stowing away spare magnets they should be placed together in pairs with their red and blue, or positive and negative poles, touching each other. When they are tied together in this way they retain their magnetic force unimpaired, neutralize each other, and are harmless even should they be placed by accident near to the compass. They will also be in good condition and ready for use when next required.

Good magnets are worth saving and taking care of. They are expensive and sometimes hard to get. Inferior tool steel magnets are plentiful and may be had almost any time with little trouble and at small expense, but they are dear at any price as compass

adjusting instruments. Like the compass needles, permanency is one of the chief requirements in a compensating magnet, and that is not possible in a cheap grade of steel. Specially made magnet steel is the only kind which should be used.

LOCATION FOR THE BINNACLE

In determining a suitable location for a compass binnacle there are at least three essential points which should be considered. First, its surroundings with respect to the effect on the compass needle of any iron near it, especially in these latitudes, if such iron is vertical, portable and subject to occasional removal. Consider where it will be the least affected by iron of this nature on all points.

Second, consider the convenience of the navigator in taking observations; and last, but not least, consider the convenience of the helmsman in steering. The compass should be as far away from awning stanchions, ventilator cowls, boat davits, mast and smoke-stack guys, stays and wire rigging as circumstances will permit, especially so from the ends of these fittings. The middle of wire stays is not so troublesome because any length of metal in which magnetism resides, or is induced by the earth's influence, is neutral in its center. Place the binnacle twelve or fifteen feet away from these parts, and, if possible, in the middle fore and aft line of the boat where a general all-round view of the horizon can be obtained. That will lessen the attraction on the compass considerably and enable the navigator to make the required observations in determining his position by the bearing of land marks and the heavenly bodies and in ascertaining the error of his compass, which should be done at every opportunity. There is absolutely no safeguard against compass deviation of every description except by acctual and frequent observations, and therefore, for this reason, place the compass where the horizon and the heavens can best be sighted, both by night and day, on the greatest number of points.

For the convenience of the helmsman, select a place for the binnacle where the compass can be seen without changing his easiest and most natural posture at the wheel. If too low, he will have to stoop to steer by it, and if too high he will have to stand too near to it to use the wheel conveniently, especially in a heavy sea. In a small vessel, particularly, it is doubly difficult to hang on and steer and watch the compass at the same time if it's not conveniently placed, and also if it is not freely balanced in its gimbals. If it is not properly balanced the edge of the card will touch the glass cover or the bottom of the bowl, as the compass bowl rocks with the boat, and it is altogether impossible to steer a straight course, under these circumstances. A little graphite will very often remedy this. Oil is not a good lubricant for the bearings of the bowl, as it gets gummy and sticky in a short time and becomes a hindrance to the free movement of the compass in its gimbals.

Place the binnacle, also, where it is not necessary for the helmsman to stand to one side of the lubber line when steering. If he stands to one side an error due to parallax will be introduced in the course. Looking at the compass from an oblique angle causes an apparent change in the relative position of the lubber line and the marginal divisions of the card. The greater the distance between the edge of the compass card and the bowl the greater the error. Unless the helmsman can keep the center of the card and the lubber line in one with his course he is sure to be to one side of it from one-eighth to three-eighths of a point, as the distance between the edge of the card and the bowl and the position from which it is viewed varies.

It is often the case that sufficient care is not taken to line up the compass binnacle so that the lubber line is parallel with the keel of the boat, and errors of this kind amounting to 7 and 8 degrees are common. This is one of the most treacherous of all troubles, and one that is not revealed by any of the ordinary methods employed for correcting the compass, which only indicate errors of the card and not of the bowl and the binnacle. Here is the rule for determining the displacement of the lubber line or the binnacle: After the compass has been carefully housed, determine accurately the deviation of the compass on the four cardinal points and mark it plus (+) when easterly and minus (—) when westerly. Add the similar names together. Take the difference between the two sums thus found, retaining the sign of the greater, and divide by four. The quotient will be the error of the compass due to the lubber line or the compass binnacle. When the error is plus (+) the *course* should be allowed to the right, and when the sign is minus (—) the error should be allowed to the left to ascertain the correct course the boat is making. For example:

Deviation,	Ship's Head, North	— 8°	Head South + 3°
"	" East	— 16°	" West + 12°
		— 24°	+ 15°
		+ 15°	
		4 — 9°	

error — 2° 15′

In this case the displacement of the binnacle could be remedied by turning it to the right 2° 15′, or else allowing for that amount of error on each and every point of the compass in shaping a course.

(To be continued.)

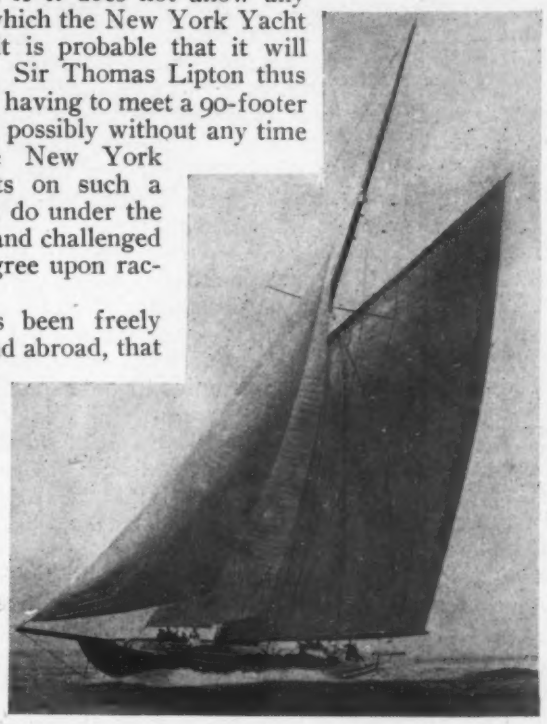
THE HARBOR AT COLON, THE CARIBBEAN ENTRANCE TO THE PANAMA CANAL

May 1913

The Month in Yachting

POSSIBLY AN AMERICA'S CUP RACE, AFTER ALL

SINCE our last issue a number of things have happened in the America's Cup controversy, and it now looks as if the New York Yacht Club will be forced to race for the tarnished bit of silver, willy-nilly. Unmoved by a storm of protests and insinuations of poor sportsmanship for its refusal of Sir Thomas Lipton's challenge in March, the New York Yacht Club turned the Irish Baronet down with short shrift when he asked for a reconsideration of his challenge; and at the present writing word has come from the Royal Ulster Yacht Club that Sir Thomas Lipton has withdrawn the stipulation as to the size of the defending yacht, which was the technicality on which the New York Yacht Club turned down his recent challenge, and was sending a challenge without any conditions whatsoever, and naming a 75-foot cutter as the challenging boat. We have not yet seen the text of this challenge, but if it does not allow any loophole through which the New York Yacht Club can escape it is probable that it will have to accept it. Sir Thomas Lipton thus takes the chance of having to meet a 90-footer with his 75-footer, possibly without any time allowance, if the New York Yacht Club insists on such a thing, which it can do under the deed if challenger and challenged cannot mutually agree upon racing rules.



SHAMROCK IV, SIR THOMAS LIPTON'S 23-METER CUTTER, WHICH HE HAS RACED IN ENGLAND AND AT KIEL FOR SOME YEARS

The charge has been freely made, both here and abroad, that the New York Yacht Club turned down the last challenge on purely personal reasons. Whether or not this is so, Sir Thomas Lipton could not have placed the American club in a worse light before the world if he had tried than by his three recent communications. In the first place, he sent a challenge that was eminently fair and which could have been accepted under the deed of gift without the slightest quibble, if the New York Yacht Club had seen fit. It did not see fit, however, nor did it see fit to reconsider its decision when asked; and now follows a challenge for the cup under precisely the same conditions, as far as the challenging boat goes, which the New York Yacht Club will have a hard time declining, and under which, if it does accept, it will probably have to meet the challenger, in deference to public opinion if for no other reason, with a boat of approximately the same size. So they are now just where they would have been had they accepted at first.

What the action of the New York Yacht Club will be, we do not know, though it has always been said that there is no loophole in the deed of gift through which a challenge for the cup can be evaded if sent in proper form.

It is interesting to note the number of articles that have been written and the arguments used to fortify the club's position, the strangest of which being those stating that Lipton always insisted on dictating his own terms and wanted the club to play his way or not at all, while other writers commiserate the "much-bothered and over-patient cup committee." The history of the last three races does not seem to bear this out. There has never been a better loser than the last challenger.

The English yachting press, on the whole, has been very moderate in its comment on these recent events; but there is no doubt that the majority of Americans are heartily sick of the whole controversy and would be glad to see a cup put up for international competition for yachts of a smaller size and one that could be raced for with boats that would give the average yachtsman a chance to get into the game, instead of a half-million-dollar syndicate proposition.

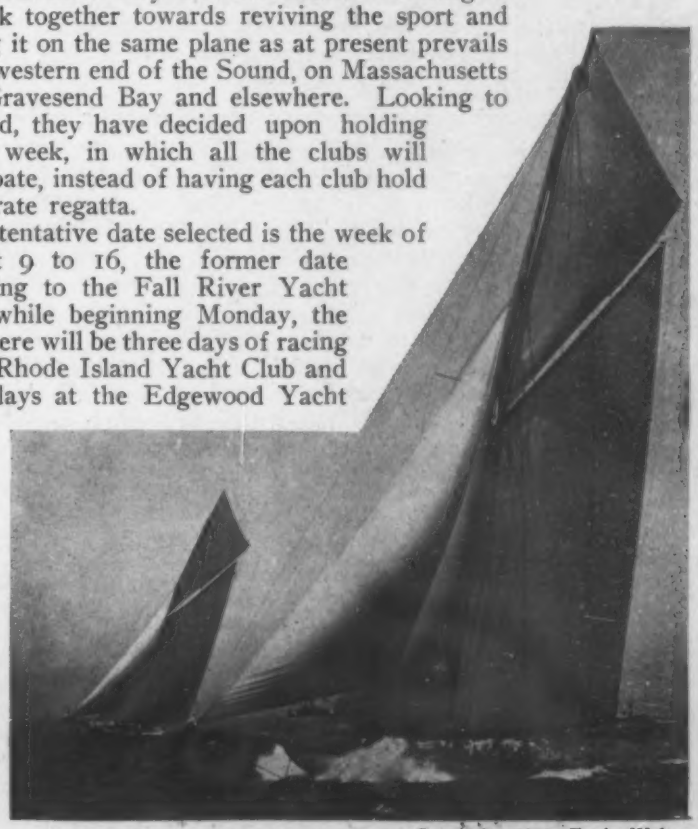
PROMISE OF A BIG YEAR ON NARRAGANSETT BAY

From the plans that are being made by those yacht clubs located on Narragansett Bay it looks as if the coming season would be the best, from a yachting standpoint, that has been seen on those waters in several years. For the past four years the racing on the Bay seems to have been on the decline and, barring the 18-foot restricted class, of which there are a number of boats on the Bay, the inter-club competition has not amounted to much.

There was a time, not long ago, when racing on the Bay was the best to be found anywhere; but with the passing of some of the well known racing boats and the retirement of a number of racing skippers, coupled with the growing interest in power boating, organized yachting lapsed except in the above-mentioned class, which was kept alive partly by an interesting series of inter-State races between the Massachusetts Bay and Rhode Island boats.

Narragansett Bay is as fine a body of water for yachting as is to be found anywhere along the Atlantic coast, and, with fourteen active clubs on its shores, it should be one of the prominent yachting centers. This year steps have been taken by the Narragansett Bay, Gravesend Bay and elsewhere. Looking to to work together towards reviving the sport and placing it on the same plane as at present prevails at the western end of the Sound, on Massachusetts Bay, Gravesend Bay and elsewhere. Looking to this end, they have decided upon holding a race week, in which all the clubs will participate, instead of having each club hold a separate regatta.

The tentative date selected is the week of August 9 to 16, the former date belonging to the Fall River Yacht Club, while beginning Monday, the 11th, there will be three days of racing at the Rhode Island Yacht Club and three days at the Edgewood Yacht



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RELIANCE (IN FOREGROUND) AND SHAMROCK III IN THEIR LAST RACE OFF SANDY HOOK. NOTE THE EXCESSIVE POUNDING OF RELIANCE DESPITE THE FACT THAT THERE IS NO SEA TO SPEAK OF

THE EDGEWOOD YACHT CLUB

THE RHODE ISLAND YACHT CLUB AT THE HEAD OF NARRAGANSETT BAY

Club. As the two clubs are close together, this means that the fleet can stay at anchor in one spot for the week and still take part in all the races. Boats from Long Island Sound clubs, Buzzard's Bay, and even from Massachusetts Bay, will be invited, and classes will be provided for everyone who wants to race. There will be entertainments on shore for the visiting yachtsmen, and the event ought to get together the biggest fleet of boats that the Bay has ever seen. There are a number of special and open-class boats now owned on the Bay, among them a new class P boat from designs by Owen, which will have a chance to show what she can do against the older P boats, and a class Q boat, while a good-sized fleet of Buzzard's Bay 30-footers should be collected, besides the 18-footers and other special classes.

There is nothing that does so much for the sport or is of such interest to skippers as inter-sectional racing, both on account of its broadening effect and of the necessity of adjusting one's self to new conditions and meeting boats and skippers new to one another. The more fully boat owners realize this and take advantage of such opportunities as this when they offer, the better it would be for the sport at large.

The date as decided upon, falling between Larchmont Race Week and the New York Yacht Club cruise, does not interfere with anything south of Cape Cod, and, therefore, a large fleet may be expected.

A NEW-YORK-TO-PROVIDENCE LONG-DISTANCE RACE

In conjunction with this race week it is proposed to run a long-distance race from the western end of the Sound to Providence in time to get the boats at the head of Narragansett Bay in time to take part in this race week. This will be the longest ocean race for sailboats on the Atlantic coast this year, the distance being approximately 150 miles, the course being down the Sound, through the Race, around Point Judith, and up the Bay to Providence. While as yet details have not been perfected, it is probable that the race will start some time Saturday, August 9, so that with any kind of luck the boats should finish not later than Monday morning. The course is an ideal one, with just enough outside work to make it interesting, while the run up Narragansett Bay can be made without any trouble, either night or day. Full details of this race and of race week will be announced later.

A BIG BLOCK ISLAND RACE AGAIN LOOKED FOR

The fact that the yachting department of the New York Athletic Club is this year again in the hands of those men who did so much to build it up assures another successful Block Island race, and it is probable that a large fleet will take part in both the sailing and power boat races from Huckleberry Island to Block Island, a distance of 100 nautical miles. Both of these races will be started on June 21, the sailboats in the morning, open to all sailing yachts belonging to any recognized yacht club. It was deemed wise this year to limit the boats to those not under 20 or over 35 feet water-line length. Boats will be rated on over-all length only, and time allowance will be figured on a basis of 10 minutes per foot.

The power boat race will be started at 5 P.M. for the Day Cup—a perpetual challenge trophy—and also for the new $2,500 Lipton Cup, which will be raced for by a special class known as the Viking class, which was promoted by the Athletic Club last year to encourage full amateur crews. This is a class that should be loyally supported by all power boat owners. Full particulars and restrictions will be published in our next issue. Mr. Harry Anderson, of the power cruiser Gardenia, is Commodore of the club, and Mr. Harry A. Jackson, Jr., chairman of the Regatta Committee, the other members being Mr. J. A. Mahlested and J. H. Wallace.

BERMUDA RACE ENTRIES

There will be surely three and possibly five New York boats in the race from Philadelphia to Bermuda for power boats, starting this year on June 7. The Philadelphia entry is the Dream, owned by Commodore C. L. Lagen, winner of last year's race, and the New York boats are the Barbara II, a 50-footer, owned by Wm. M. Duncan, of the Staten Island Yacht Club; the Tec, a 40-footer, owned by W. C. Wheeler, and Seawolf. Other Philadelphia boats are expected to enter, and promises have been obtained from the owners of two or three other New York boats. It is hoped these promises may be fulfilled better than was the case last year.

THE FLEET OFF THE RHODE ISLAND YACHT CLUB DURING A RACE WEEK

Vonna, a French Challenger for the B. I. Trophy

THAT the interest in the race for the British International Trophy, to be held on the Solent this summer, will be even greater than usual is assured by the fact that France will be represented in the contest as well as England and the United States. By the courtesy of our English contemporary, *The Motor Ship and Motor Boat*, we are able to reproduce here one of the first photographs taken of the French hydroplane Vonna, which is intended to represent France in this race.

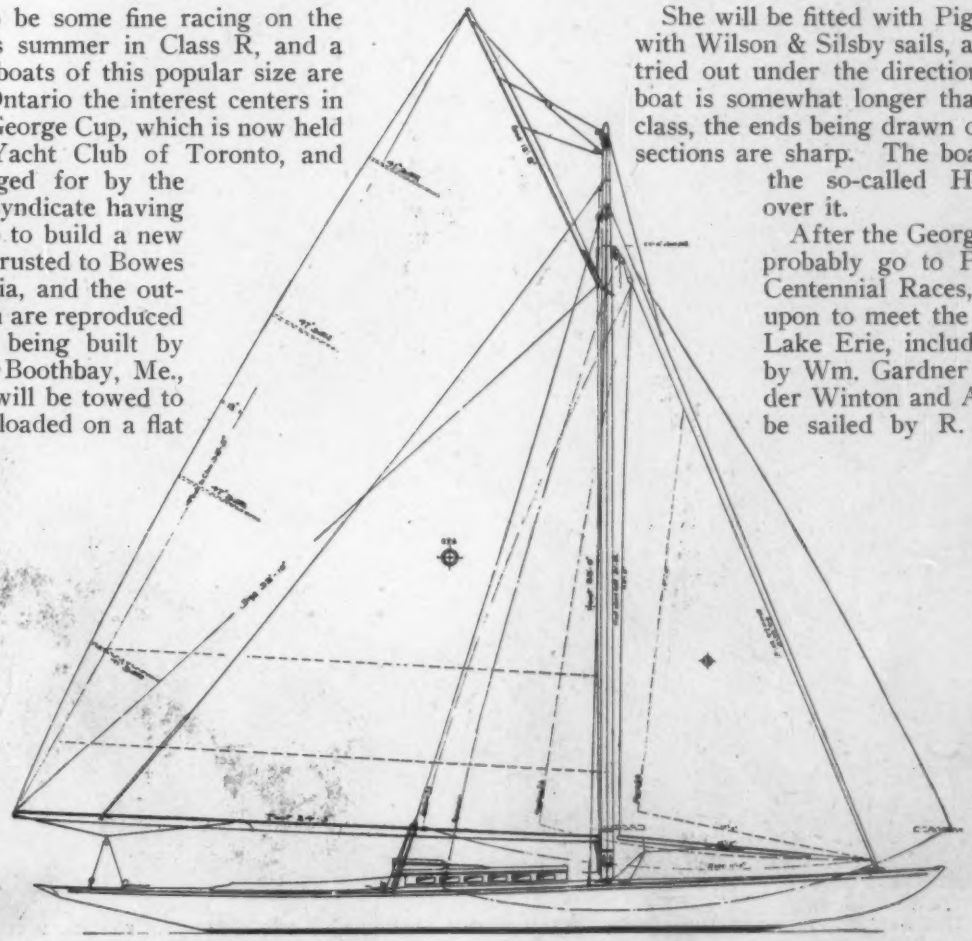
The hull has been built by Tellier, one of the best-known French builders. Her stern on top resembles somewhat the stern of the successful Maple Leaf IV of last year. The engines are by Bayard-Clément. There are two of them, each of 6-cylinders, 155 x 200 mm. bore and stroke, driving twin screws, each motor being rated nominally at 250 horsepower. The engines are carried on a spring-supported frame, as in airships and motor cars; and as the former method has given entire satisfaction in the air, there appears to be no reason why it should not be successful afloat. The boat is practically ready, and is expected to be tried out at Monaco. This ought to give a pretty good line on what she can do.

From the outlook at present, there are four British boats that are likely to be entered for the trials, and, contrary to the usual practice here and abroad, excessive speed is not claimed for any of them; while one of them has done 51 or 52 miles per hour, 45 knots is about what is looked for from the British team. The Britishers are as yet not concerned deeply over the talk from American quarters of 65 miles per hour, or from France that the Vonna is certain of doing nearly 60; and they seem to feel that, while Great Britain might not be represented by the *fastest* boat, they are satisfied that she has a fair chance of retaining the trophy.

The Crescent Yacht Club's Class R Challenger

THERE is going to be some fine racing on the Great Lakes this summer in Class R, and a number of new boats of this popular size are being built. On Lake Ontario the interest centers in the race for the famous George Cup, which is now held by the Royal Canadian Yacht Club of Toronto, and which has been challenged for by the Crescent Yacht Club, a syndicate having been formed in that club to build a new boat. The design was entrusted to Bowes & Mower, of Philadelphia, and the outboard profile and sail plan are reproduced herewith. The boat is being built by Hodgson Bros., at East Boothbay, Me., and, when finished, she will be towed to Bath, where she will be loaded on a flat car and shipped to the Crescent Yacht Club at Chaumont Bay, where she will be tuned up for the International Race, beginning July 7, against the former Class R boat Watertown, also a Bowes & Mower design. The principal dimenions of the boat are:

	Ft.	Ins.
Length over all....	38	0
Length waterline...	22	6
Beam, extreme....	7	5
Draft, extreme....	5	3
Freeboard, bow....	2	7
Freeboard, stern...	1	11
Freeboard, least...	1	8
Sail Area:		
Mainsail .....465 sq. ft.		
Jib .....120 sq. ft.		
Total.....585 sq. ft.		

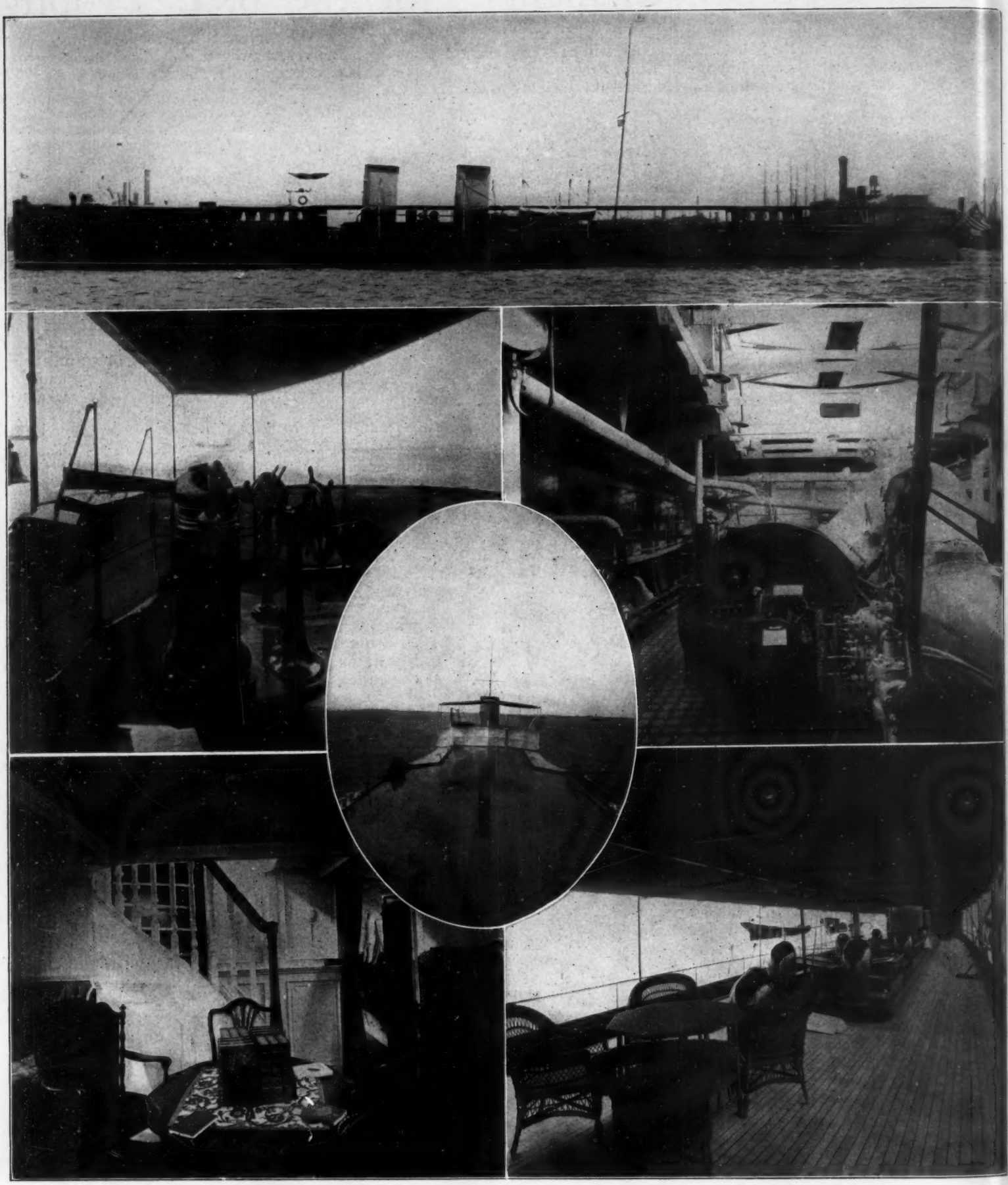


She will be fitted with Pigeon-Frazier hollow spars, with Wilson & Silsby sails, and she will be rigged and tried out under the direction of her designers. The boat is somewhat longer than the older boats of this class, the ends being drawn out very finely, though the sections are sharp. The boat has a small cabin with the so-called Herreshoff narrow house over it.

After the George Cup Races the boat will probably go to Put-in-Bay for the Perry Centennial Races, where she will be called upon to meet the fastest Class R boats on Lake Erie, including a new boat designed by Wm. Gardner for Commodore Alexander Winton and A. J. Prentice (which will be sailed by R. E. Power), Lakewood, Psammiad, and probably the best of the Canadian boats of this class from Toronto.

This new boat bears a close resemblance to the new class P boats, although, of course, being much smaller. It seems strange that the class has not developed more on the Atlantic coast, as the boats are a particularly suitable size for Long Island Sound, Massachusetts Bay, Narragansett Bay and such waters.

In the June issue of YACHTING will be a story on the History and Growth of the Popular Class R boats on the Great Lakes.



WINCHESTER, THE NEW 205-FOOT TURBINE EXPRESS STEAM YACHT DESIGNED BY COX & STEVENS FOR MR. PETER W. ROUSS

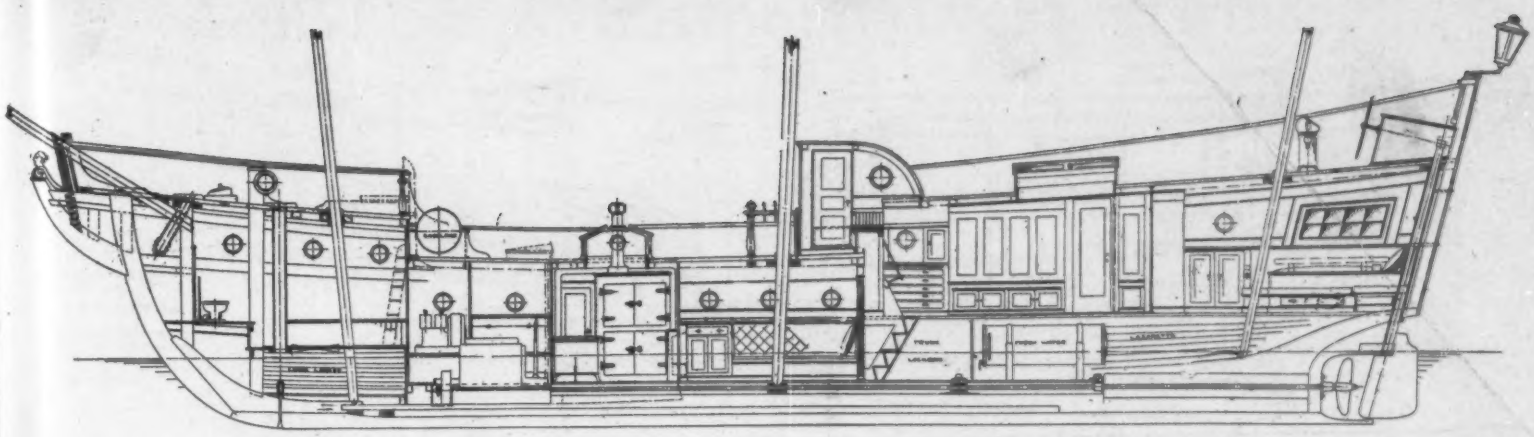
THE NAVIGATING BRIDGE

ENGINE ROOM, SHOWING ONE OF THE 3,000-H. P. STEAM TURBINES

LOOKING AFT FROM THE FORECASTLE HEAD

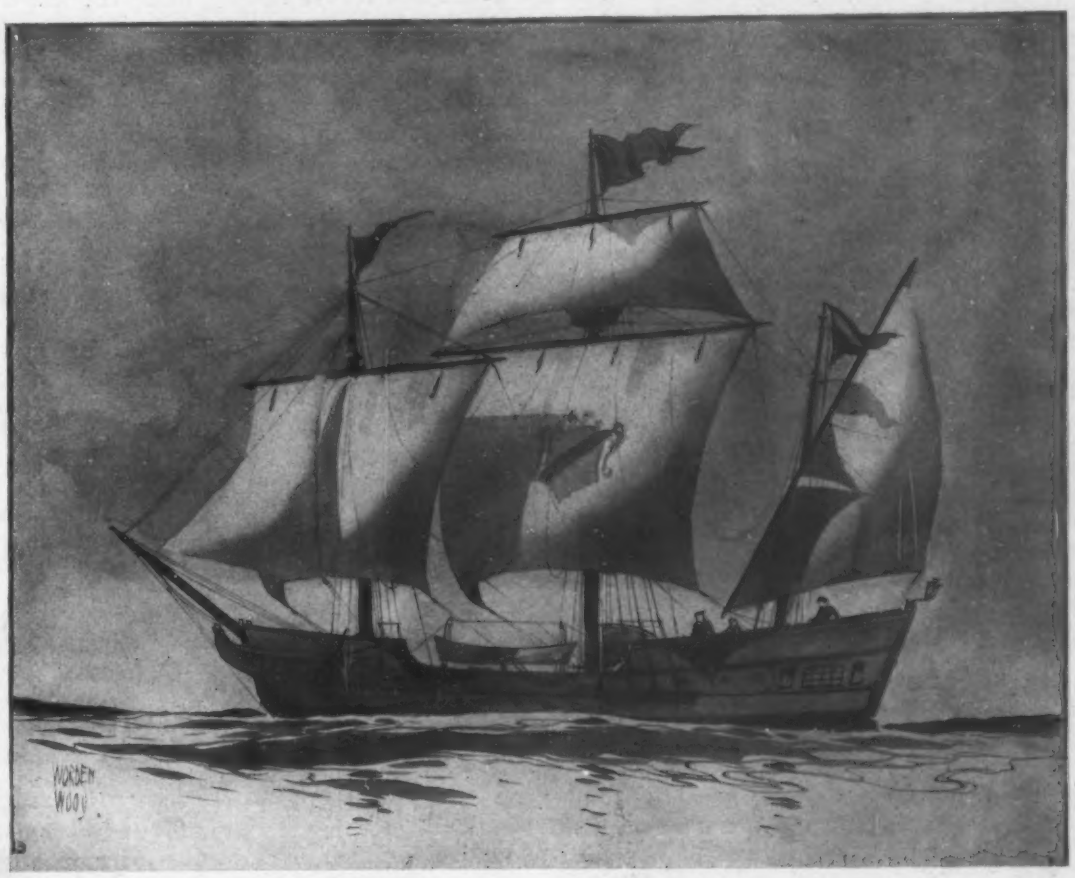
COMPANIONWAY TO MAIN SALOON

THE SPACIOUS AFTER DECK



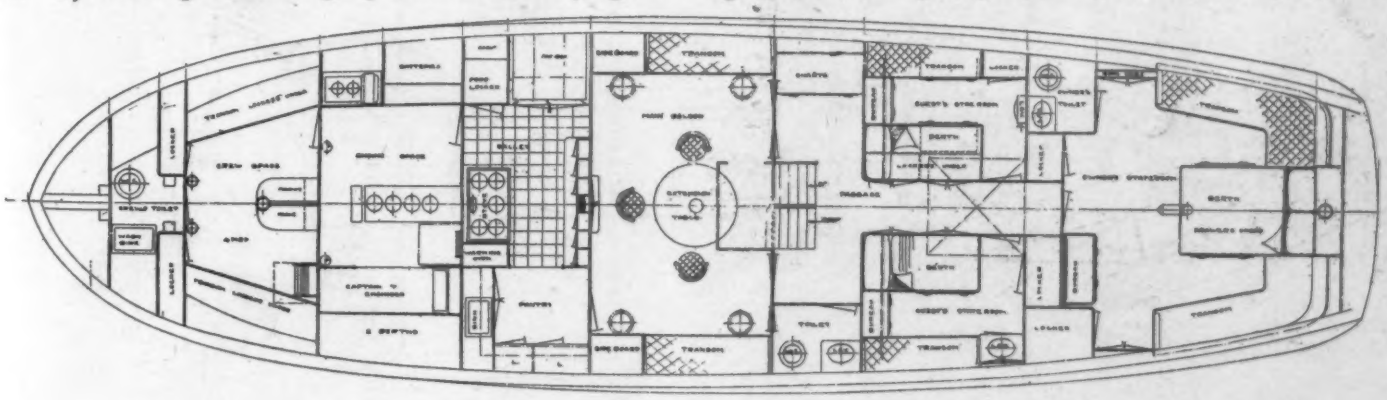
A Novel 76-Foot Houseboat

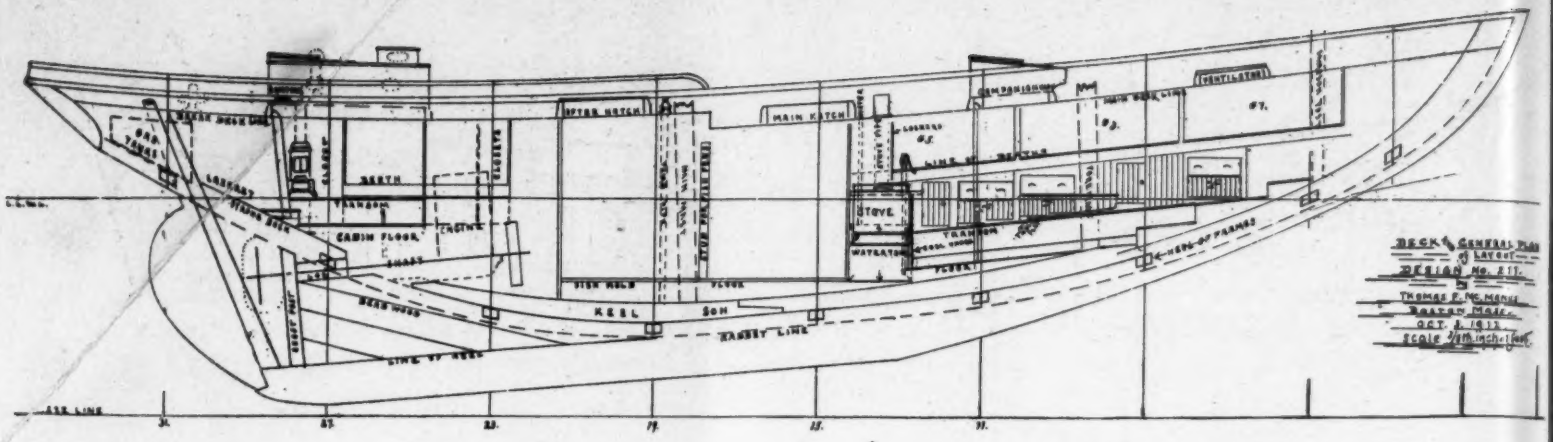
WHAT at first glance at the accompanying plans and drawing may look like one of the caravels of Columbus is in reality a very novel and attractive houseboat which has been recently designed by Swasey, Raymond & Page for Mr. Henry A. Morss, of Boston. It is probable that Columbus never smelt gasolene, and this boat will differ from the ancient vessels of this type in that she is equipped with a 6-cylinder, 60-horsepower Sterling engine which, it is estimated, will drive her at a speed of 7 knots, which is exceptionally good, considering the displacement and generous beam. The principal dimensions are: 76 feet over all, 21 feet beam and 3 feet 8 inches draft.



While this boat looks like a peculiar proposition, she has a remarkable amount of room for her size, and should prove, in a great many ways, a most comfortable craft to live on. By working out the high quarter deck, carrying the sheer well up aft, it was possible to get a large owner's stateroom at the very after end of the boat with more light than in the average yacht. Just forward of this are two large guests' staterooms, with toilet, closets and lockers. In the center of the boat is a large main saloon, having fine headroom and plenty of transom space. Between this main saloon and the after living quarters is a passage leading both to the lower and upper decks, which allows a good navigating room in close proximity to the upper deck. The galley is located just forward of the main saloon, with a partial stateroom for the captain and steward on the port side. The engine room is just forward of this galley, and is also very spacious. The gasolene tanks are on deck, eliminating all danger.

The idea of the old type of ship is to be carried out to the last detail, especially in the way of the figure head, the fighting tops and carvings and poop lantern aft.

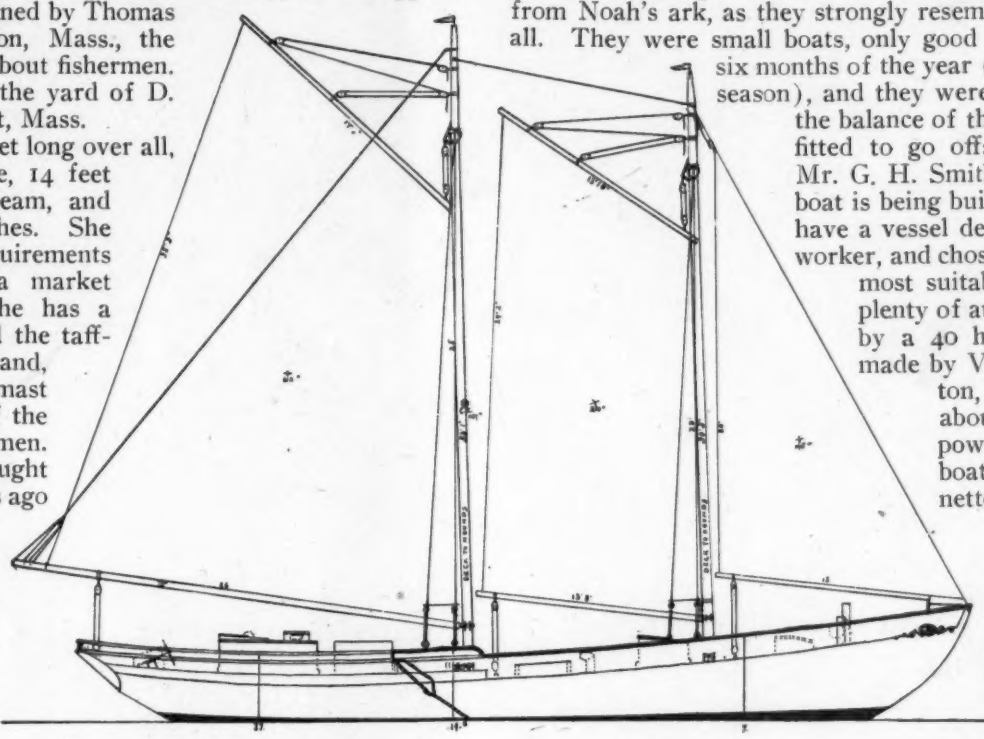




A 55-Foot Knockabout "Shore" Fisherman

ONE of the new commercial boats of the year, and one that will prove interesting to those yachtsmen who like a wholesome, able boat of the fishermen type, is the 55-foot overall knockabout designed by Thomas F. McManus, of Boston, Mass., the originator of the knockabout fishermen. She is now building at the yard of D. M. Woddell, at Rockport, Mass.

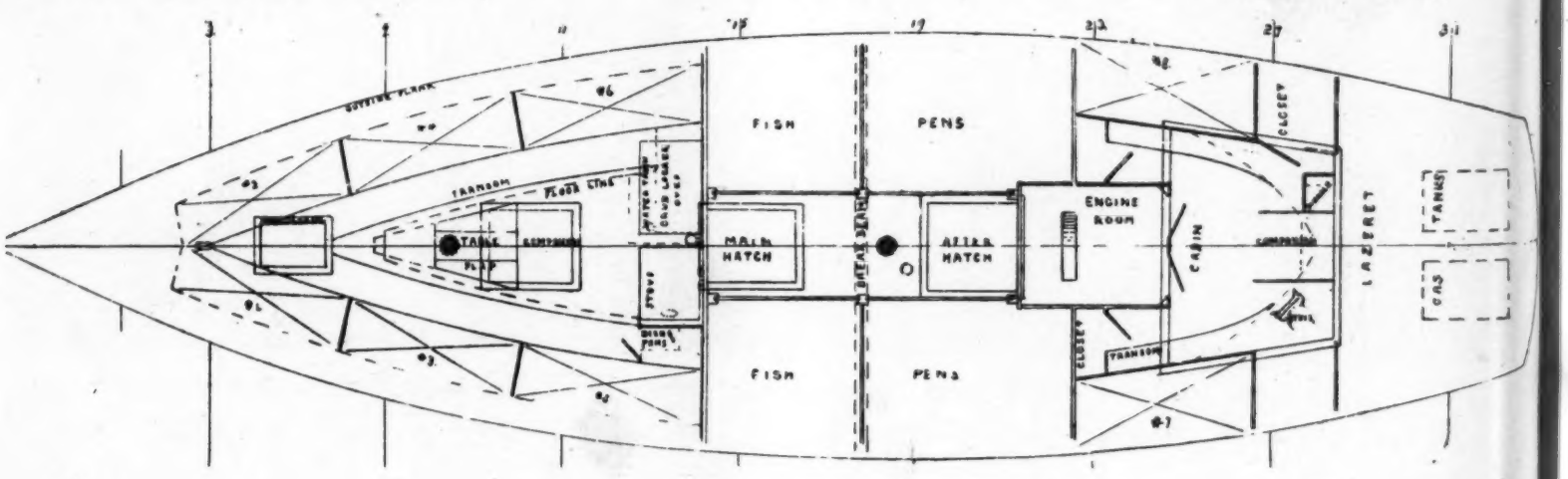
This little boat is 55 feet long over all, 43 feet on the waterline, 14 feet 6 inches breadth on beam, and draws about 7 feet 6 inches. She was built to meet the requirements of a gill-netter and a market "shore" fisherman. She has a low quarterdeck aft and the taff-rail of the fishermen, and, barring her short pole mast rig, is a small edition of the out-and-out Bank fishermen.



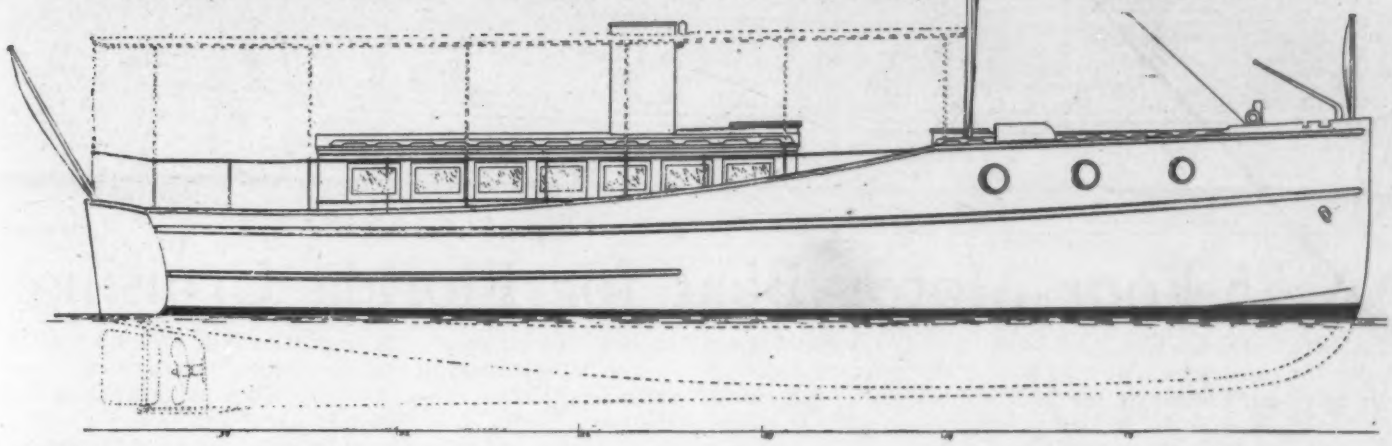
Gill net fishing was brought to Cape Ann a few years ago from Lake Erie by Capt. John W. Atwood. This method of fishing consists of setting light gill nets along the bottom of the fishing grounds, whence they are lifted or hauled up by power furnished by a gasolene engine after they have been set a certain length of time. These gill nets are carried in boxs, four to a box, and a vessel will set from seven to fifteen boxes on a trip.

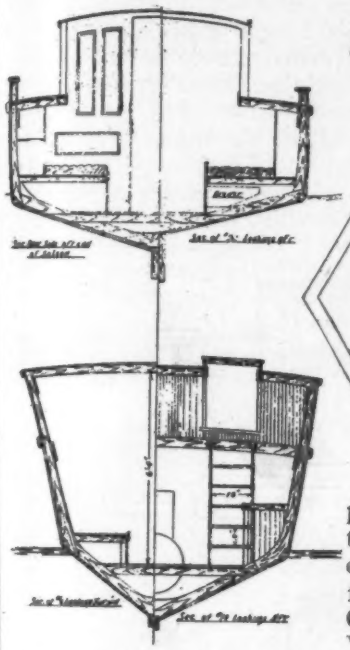
The first gill netting was done in boats brought from Lake Erie. These boats were nothing more nor less than large power boats which, according to the Gloucester men, had their lines taken from Noah's ark, as they strongly resembled the ark—house and all. They were small boats, only good for inshore work about six months of the year (the length of the netting season), and they were mostly laid up idle for the balance of the year, as they were unfitted to go offshore. For this reason Mr. G. H. Smith, for whom the present boat is being built, decided that he would have a vessel designed that was a real worker, and chose a knockabout rig as the most suitable type, with, however, plenty of auxiliary power furnished by a 40 horsepower Ideal engine made by Victor Emery, of Wollaston, Mass. This power is about twice the size of the power usually installed in boats of this type. The gill-netter, however, needs lots of extra power, as she frequently has from three to five miles of nets out, and to lift these in a hard wind and head sea a little boat should have all the power she can get.

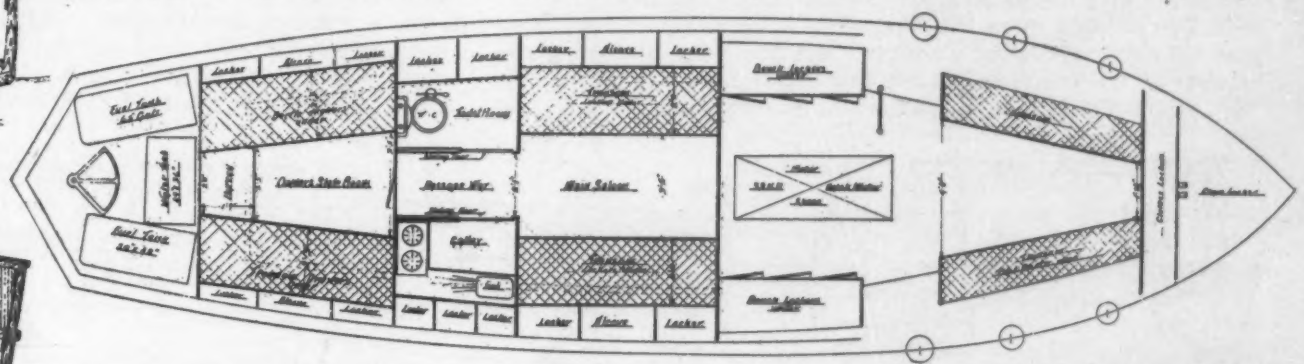
In winter the sails are used principally to relieve the strain on the engine in going out and returning from the grounds—and also to give the crew a chance for their lives in case of engine breakdown.



A 42-Foot V-Bottom Power Cruiser



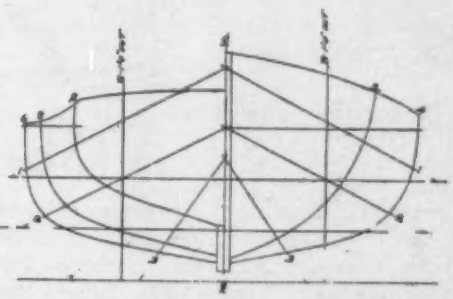


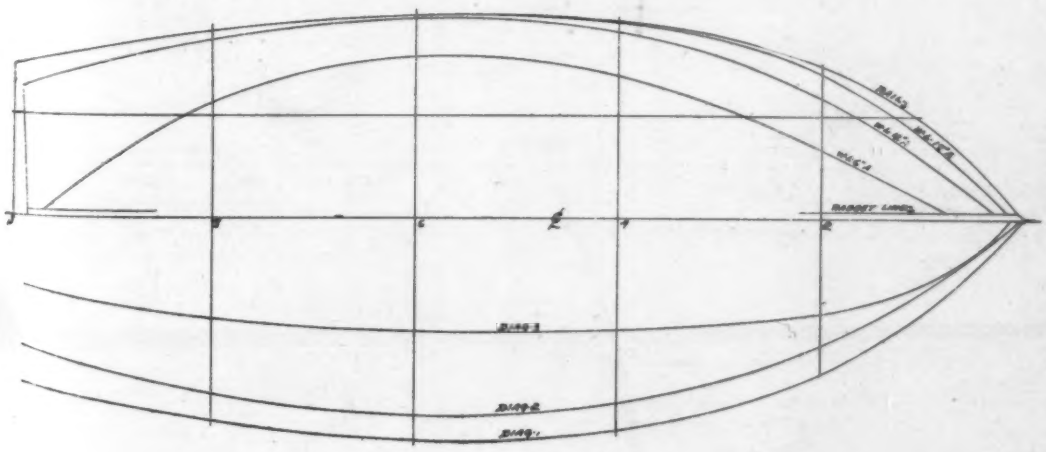


THE plans of the 42-foot V-bottom cruiser which we publish herewith are of a power cruiser that is being built by the Bayonne Launch Co., of Bayonne, N. J., from their own designs for Mr. A. Hoffman, of New York City. This is one of the largest V-bottom cruisers to be used solely as a pleasure craft that has been built. The seaworthy qualities of this type, which is commonly known as the "skipjack," are appreciated by those who have had any experience with the type; but the principal drawback heretofore has been its box-like appearance, owing to the straight sides which have generally been built in these boats. This, however, has been overcome in the Doyle model V-bottom boats this company is building. It will be noticed that the plans under consideration contain just enough round in the side frames to give the boat the appearance of a round-bottom cruiser.

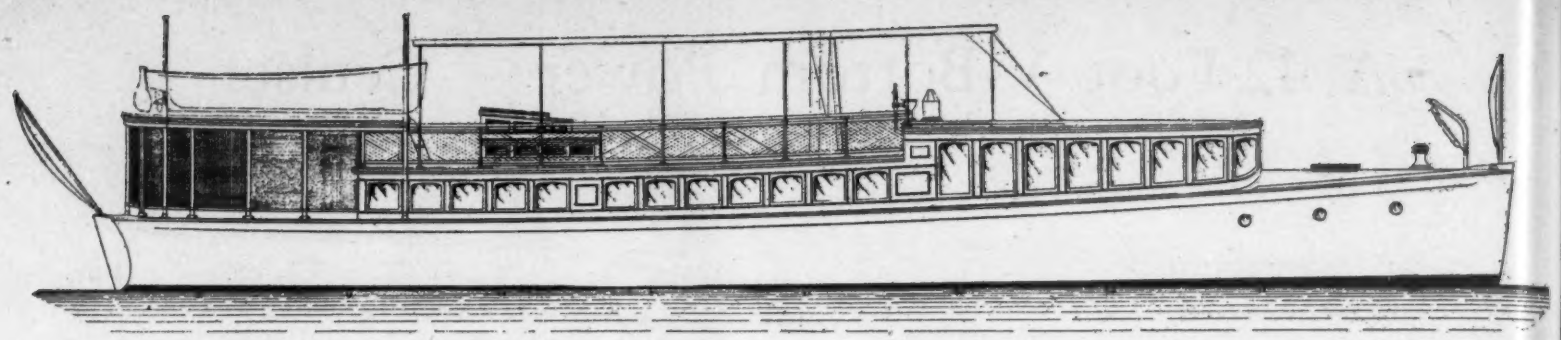
This boat is 42 feet 6 inches long and 11 feet beam. The engine is located under the bridge deck, aft of which is the main saloon. Abaft of this is the galley, followed by the owner's stateroom. The motor is a 32 horsepower Hatch, 2-cycle, and the fuel used will be kerosene. A speed of 11½ miles is expected.

An Able Little Tender





EVERY man who owns a boat, whether sail or power, is interested in the dinghy problem. One of the hardest propositions he has to meet is finding a tender that is stiff, able, easily towed, and at the same time has good carrying capacity, so that she will be able to accommodate more than the owner and a case of beer. The plans of the little 10-foot boat which we publish here from designs by Ralph E. Winslow are of a boat that should meet all these requirements. She is 10 feet long over all, 4 feet beam, 15 inches deep, with 9½ inches rise in sheer forward and 3 inches aft. She has good bearing surfaces, and can carry all that can be crowded aboard.

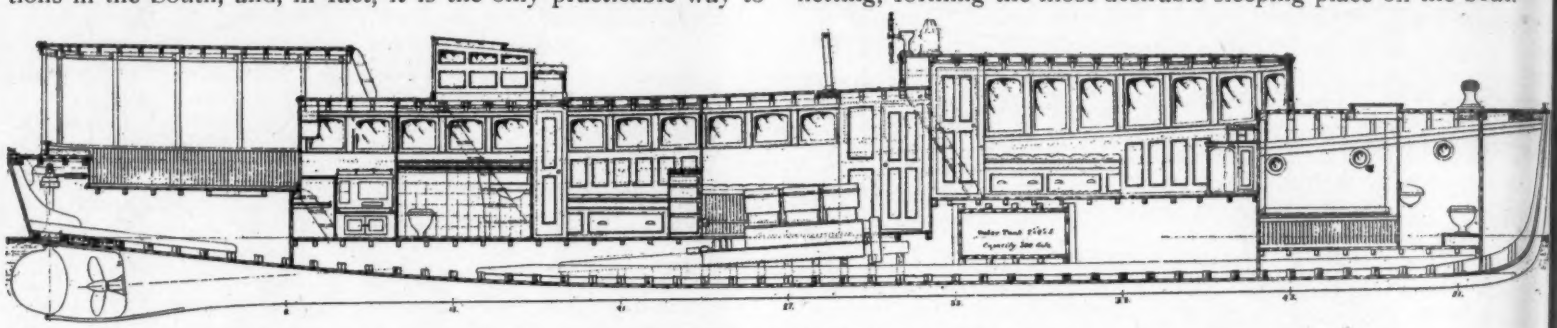


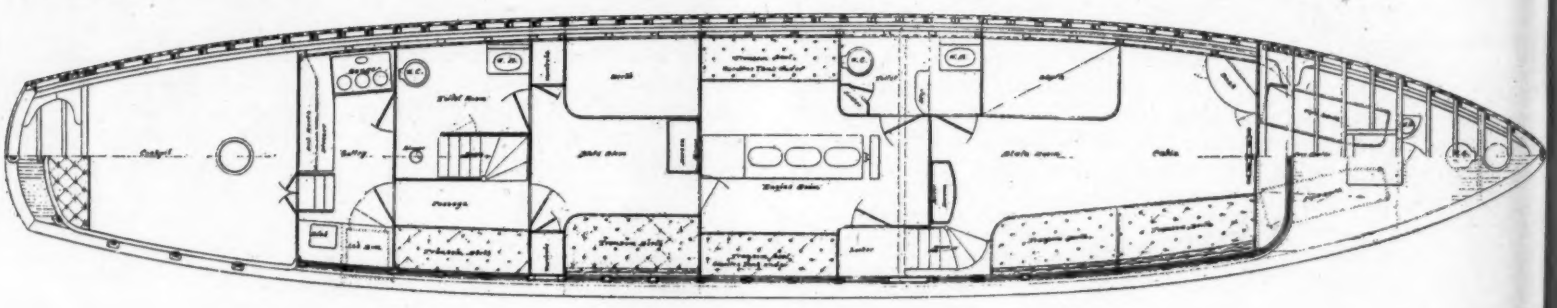
A 75-Foot Motor Boat for Florida Cruising

MESSRS. COX & STEVENS have recently placed an order for the construction of a 75-foot cruising motor boat for a Southern yachtsman the design of which has been most carefully developed with the idea of producing a boat that would be comfortable to live on throughout the year in Florida and Southern waters. The dimensions of this vessel are: Length over all, 75′; beam, 13′ 6″; draft, 3′ 6″. The motive power consists of a six-cylinder Sterling engine developing 60 horsepower, which will give the vessel a speed of at least 12 miles an hour.

In determining upon the type of boat the designers, realizing that light and ventilation were essential, decided on the low glass-cabin type. This style of boat is best suited to the climatic conditions in the South, and, in fact, it is the only practicable way to build a boat for these waters unless a regular houseboat is desired.

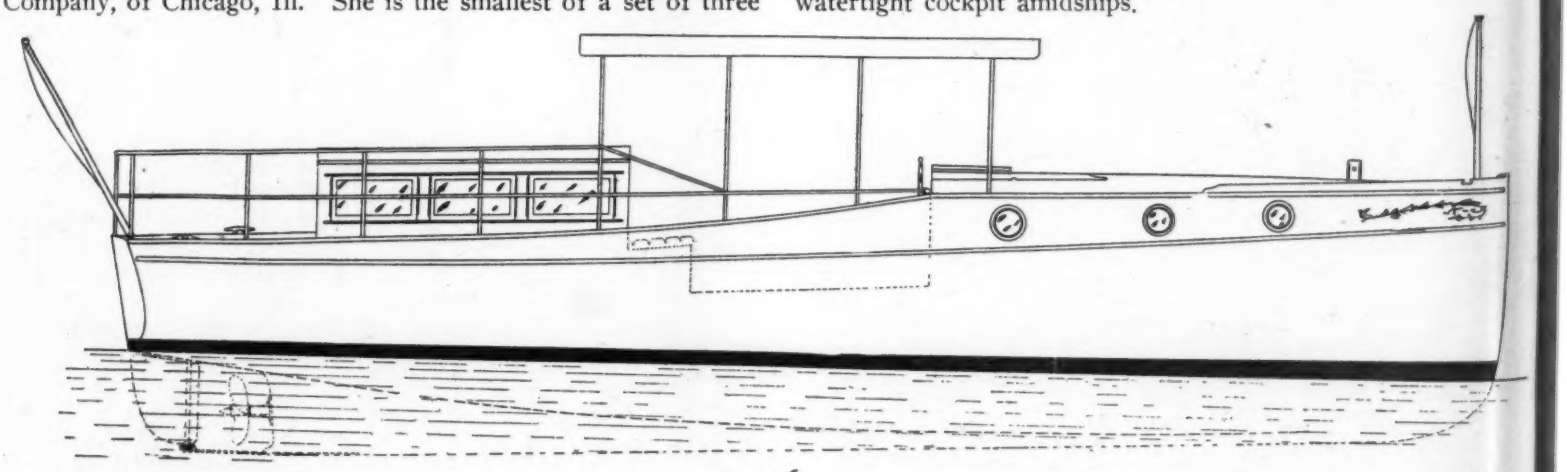
The arrangement of the sleeping quarters is a novel one. The crew are berthed forward of the raised portion of the boat, under the turtle back. The engine is placed practically in the middle of the vessel in a compartment entirely separated by bulkheads, the gasolene tanks being located in this compartment. Forward of the machinery compartment is the owner's room and cabin combined, having on the port side a double bed with drawers underneath, the mattress being upholstered so that when not in use it forms a comfortable davenport. Aft of the engine room is another stateroom, toilet room and galley. The cockpit, 12 feet in length, with a standing roof covering it, is enclosed with mosquito netting, forming the most desirable sleeping place on the boat.

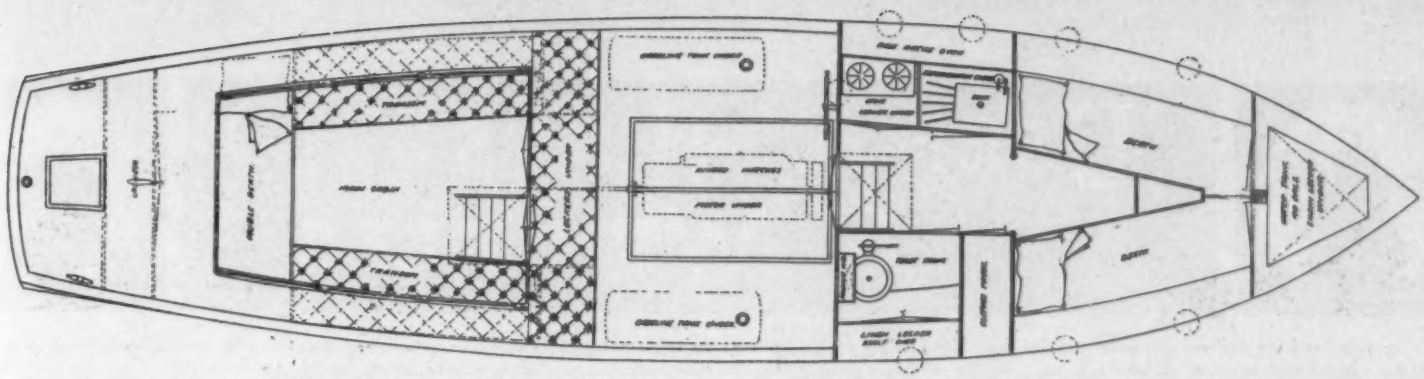




A 36-Foot Double-Cabin Cruiser

THE plans of the 36-foot cruiser which are reproduced herewith are of a 36-foot boat of the now popular double-cabin type that has been designed and built by the Weckler Boat Company, of Chicago, Ill. She is the smallest of a set of three stock models built in 36, 40 and 46-foot sizes. The boat has good beam, excellent living accommodations, and will sleep six persons comfortably, while there is ample deck space and a good-sized watertight cockpit amidships.





There is a large water tank forward, followed by a stateroom with two single berths, galley and toilet. The motor, a 30 horsepower, giving a speed of about 10 miles per hour, is installed under flush hatches in the cockpit well, with the spark, throttle controls, and reverse lever at the side of the steering gear. The sunken bridge deck is a very attractive feature.

Proposed One-Design Class for Bellport Bay Y.C.

THE Bellport Bay Yacht Club, one of the keenest racing clubs on Great South Bay, has had plans drawn by J. A. Connolly, Jr., N. A., for a one-design class of racing sloops somewhat larger than the present class of boats which the members of this club have been racing for some years.

The new boats are centerboard craft, 32 feet 11½ inches long over all, 18 feet on the waterline, with a beam of 8 feet and extreme draft without board of 2 feet 6 inches. They carry a total sail area of 480 square feet, have about 950 pounds of lead on the keel, and rate under the rule 20.1.

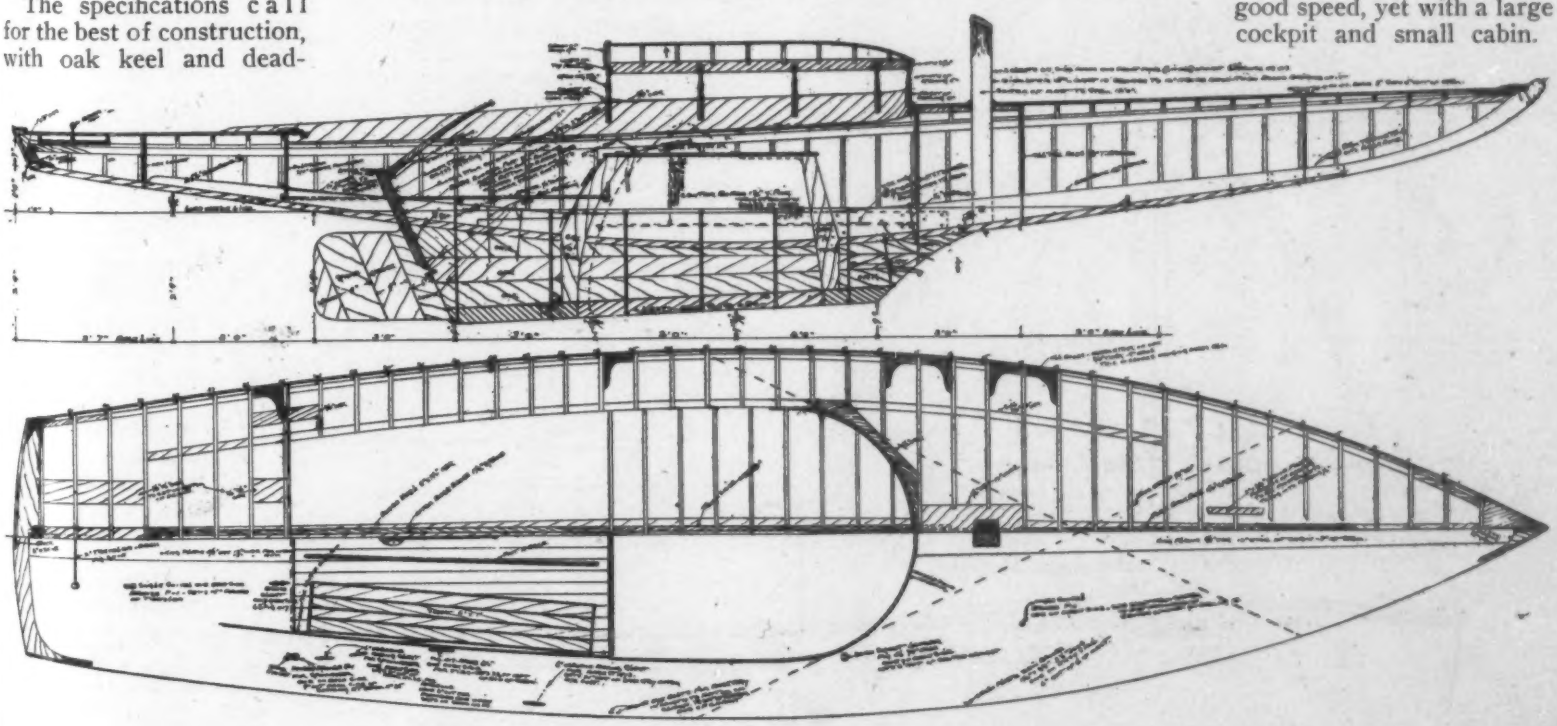
The sheer elevation shows an extremely handsome boat with long overhangs and good bearing surfaces, which should prove not only extremely fast, but able to carry sail as well, the rig being well inboard. There is a summer cabin over the forward end of the cockpit, giving about 4 feet of headroom and offering a shelter in case of wet weather.

The specifications call for the best of construction, with oak keel and deadwood, oak frames with hackmatack knees and a spruce backbone for giving additional strength. The planking is ⅝-inch cedar and the decking ⅝ by 1½-inch Oregon pine. The deck fittings are of the best.

These boats should make ideal racing craft, and, for a one-design class of moderate size, should furnish the very best of racing. It would be a good thing if a number of boats of this class could be built on the Bay so as to give a large class for inter-club racing. They are also a type of boat that should prove excellent for day sailing and for limited cruising in shoal waters, such as the bays on the south side of Long Island.

The designer states that these boats can be built complete for $1,000, and that three of them have been ordered and will be ready for delivery June 15 at Bellport, for the first of a series of races that will be held on Great South Bay throughout the season.

Those who are building desired a fast, able and comfortable boat, capable of good speed, yet with a large cockpit and small cabin.



USEFUL HINTS & WRINKLES

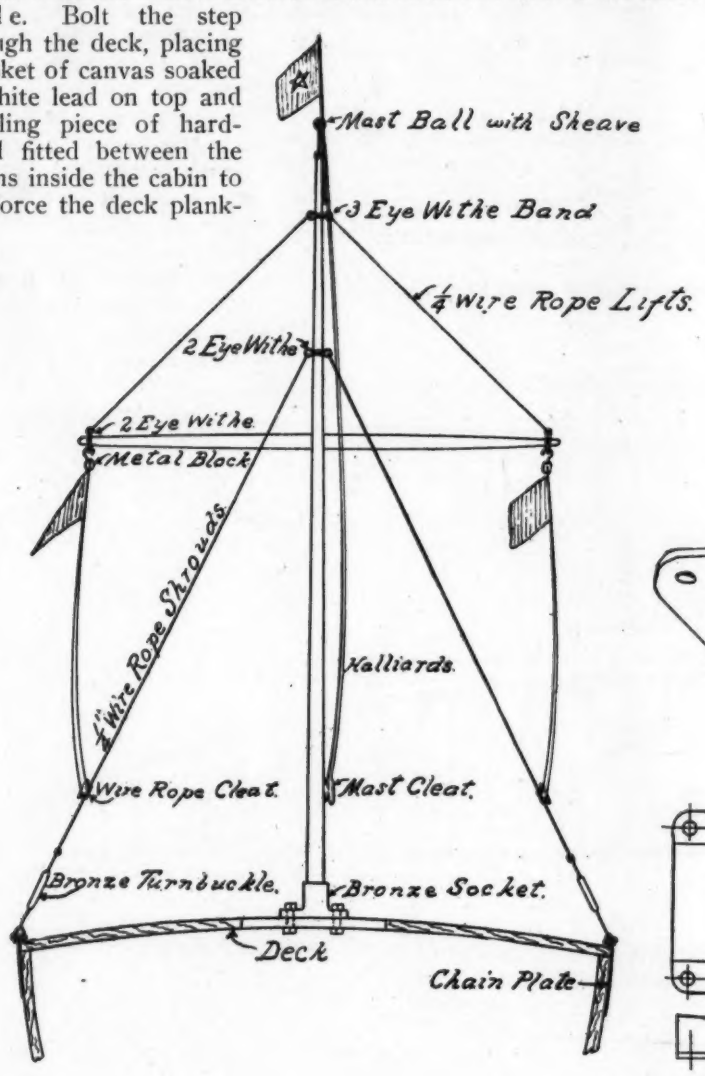
Under this head we will publish short articles from the readers of YACHTING, describing original ideas they have worked out for improving the efficiency and handiness of their boats and engines. These will be paid for at space rates. Articles must not be over 500 words in length, should be accompanied by ink drawings where possible, and must be addressed to Editor of YACHTING, 141 W. Thirty-sixth Street, New York. Here is a chance to be a philanthropist by giving to other boat owners information on some of the handy wrinkles you have applied to your own craft.

Rigging a Signal Mast

A signal or military mast adds very materially to the appearance of the cruising power boat, and the drawings herewith show how to step and rig one.

The mast should be a tapered spruce spar about one-third the over-all length of the boat and about 3 inches in diameter at the heel for a 30 to 40-foot craft, with a yard two-thirds the length of the mast and the slings placed two-thirds of the distance above the deck, at the forward side of the mast. The shrouds and head-stay are ¼-inch wire rope, each fitted with 5/16-inch bronze turn-buckles, which should have a shackel in one end to bolt into chain-plates at the sides and an eyebolt near the stem for the head-stay. The mast should be stepped as near the center, fore and aft, as possible, and set plumb. The chain-plates are placed about one foot aft of a line with the mast to act as backstays and prevent the mast being pulled out of plumb by the head-stay.

The step should be a bronze flag pole socket, or, if necessary to lower very often for bridges, a hinged step, which is a stock article, is much handier for quickly lowering, and should be placed so that when the mast is lowered it will lie at one side of the cabin slide. Bolt the step through the deck, placing a gasket of canvas soaked in white lead on top and a filling piece of hard-wood fitted between the carlins inside the cabin to reinforce the deck planking.



The slings are galvanized screw eyebolts held together with a shackel. A two-eye withe band is fitted over a shoulder at each end of the yard, a similar one about a foot above the slings on the mast and one having three eyes one foot below the cap to hold the head-stay and the lifts. In place of withe bands, eye splices make a neat job and are stronger.

Place a metal band over the masthead and drive in a rod to which is attached a mast ball having a sheave to reeve the halyards through. Wire rope cleats seized to the shrouds are for the halyards, which run through small metal blocks at the ends of the yard.

H. W. LOWERRE.

For Preventing Back Wash in Scuppers

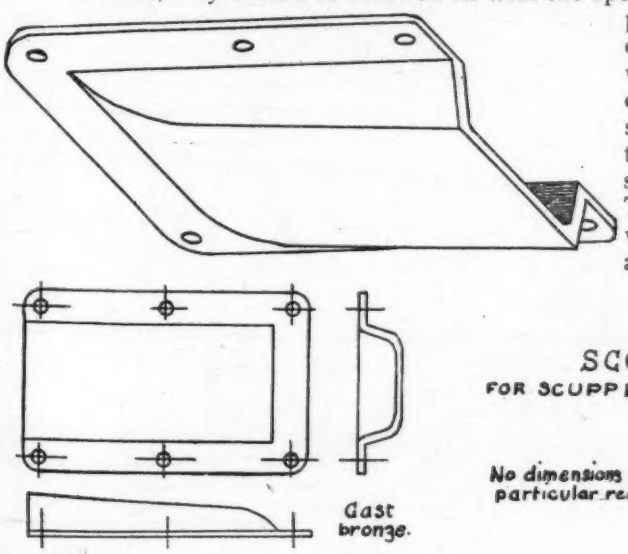
The following "wrinkle" for keeping the cockpit of a power boat dry has saved us a lot of trouble, annoyance and wet feet:

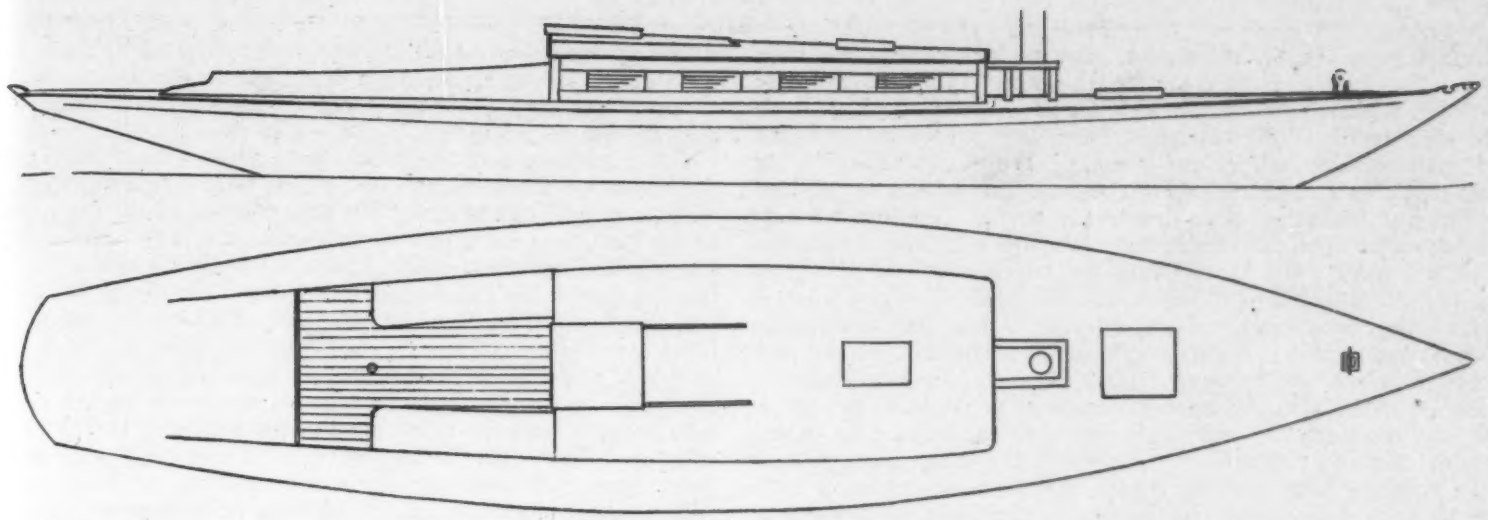
The drawing herewith shows a bronze scoop made to screw over the outside openings of the scupper pipes from a self-draining cockpit so that when the boat is under way no water will spout back through the scuppers and run over the cockpit floor. I have used a pair of these scoops on a 28-foot, raised-deck cruiser the cockpit floor of which was about 1 inch above the waterline, due to the boat drawing more water when she was launched than was anticipated. Although the scuppers (1¼-inch lead pipe) had to be plugged up while at anchor, the cockpit drained perfectly when under way at 7 miles per hour, and no water was forced back through the scuppers.

Later, the cockpit floor was raised 6 inches, and, as an experiment, the scoops were left off. As soon as the boat began to roll and pitch in a rough sea, water spouted up through the scuppers and ran all over the floor. Then the scoops were again attached, and not a drop of water ever gets back through the pipes, no matter how rough it is, and rain and spray in the cockpit is drained off more rapidly than before, due to the suction of the scoops. When backing up at full speed for any length of time with a crowded cockpit, some water will be forced back into the cockpit; but for all ordinary reversing no trouble is experienced.

A wooden pattern was first made, taken to a brass foundry and two castings made of bronze. These castings were cleaned up, drilled and countersunk for brass screws to attach to hull. Of course, they should be screwed on with the open end of the scoop pointing aft, in order to draw the water out. The drawings show the scoop in detail, though no dimensions are given. These can be worked out to suit any size of boat.

H. H. PARKER,
Oakland, Cal.





Making a Cruiser out of a Racer

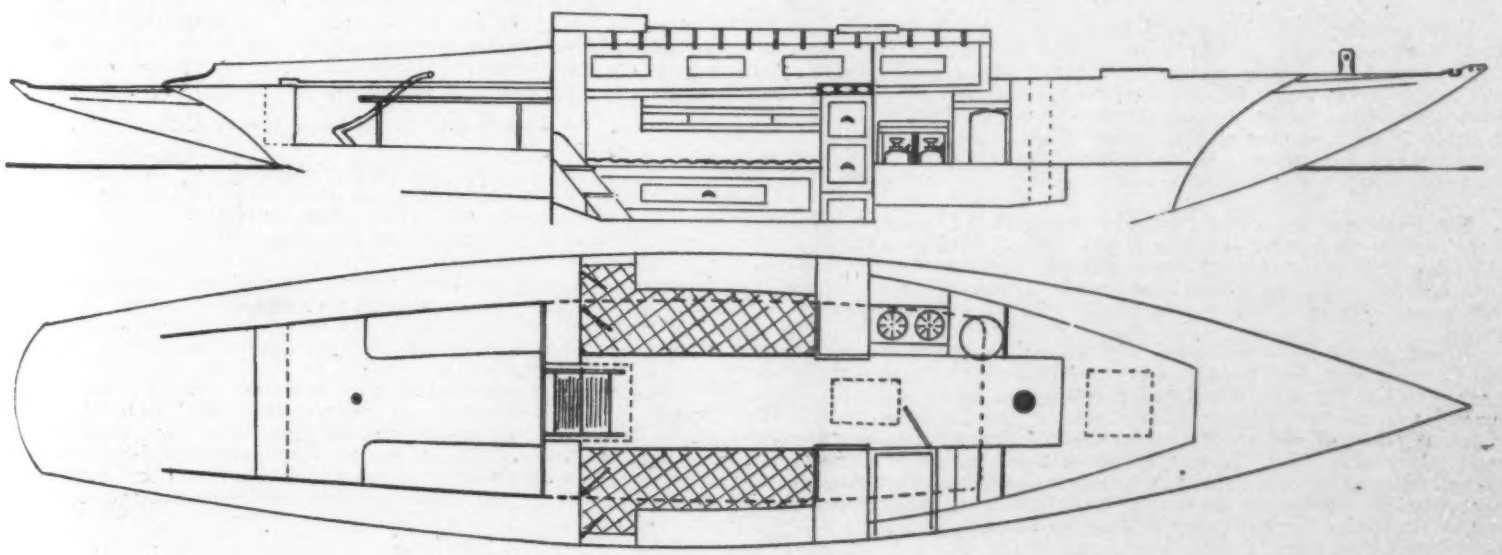
AS far as I know, this is the first attempt that has been made to convert one of the modern class Q boats into a bona fide cruiser; and as from my point of view the result has been most satisfactory, it may prove of interest to the readers of YACHTING to hear how it was accomplished. I require a boat with as much comfort for two people and as much sea-going ability as can be had in a boat that can be handled, reasonably speaking, by one man. Therefore, the problem I attempted to solve was not that of the maximum sleeping accommodation on a given length, but rather that of maximum all-round comfort for two, regardless of size. The ease and safety with which the boat could be handled entered quite as much into the question as the room below.

AFTER CABIN WAS ADDED

AS SHE WAS BEFORE

For three years I owned and sailed the Crowninshield 21-footer Iseulo, 33 feet over all, 7 feet 6 inches beam, 5 feet 3 inches draft, and a sail area of 534 square feet. Her cabin trunk was 9 feet long, with 4 feet 4 inches headroom under carlins. She was smart, able, and the most perfectly balanced boat I have ever seen, and we got a lot of fun out of knocking around inside and out; but her galley was somewhat restricted and she needed more room for lockers, etc., so I decided that when the opportunity came along I would try one of the Universal Rule Q boats. In 1912 I bought Tomboy II, ex-Spider, 36 feet over all, 24 feet 10 inches waterline, 7 feet 6 inches beam, 5 feet 10 inches draft, and 830 square feet of sail. At that time she had no cabin accommodation and only a small hatch in the forward deck, for stowing sails, etc., below. She was a typical class Q racer.

As I wanted a cruiser (a fast one) I put her in the shop soon after her arrival at Riverside, R. I., and took out her entire interior, including the cockpit, and cut out the deck to 17 feet 9 inches long and 5 feet extreme width; and then for six weeks the carpenters labored to carry out my ideas as to what a cruiser should be. I discarded the bowsprit, cut down both mainsail and jib, and put a cabin house on her, which is a cross between the ordinary trunk cabin and the coach roof house of the Buzzard's Bay 30's. This house is 11 feet long and 5 feet extreme width, with 5 feet headroom, is built of mahogany, the sill being 1⅛-inch stock, and is 14½ inches above the deck at the after end. Eight ¼-inch plate-glass windows, 18 inches long, two of which are in the galley, give plenty of light, and two 6-inch port lights, and a hatch, 18" x 12", which comes over both cabin and galley, furnish the ventilation.



Entering the cabin, there is a clothes locker on each side, 18" x 10½" x 42". Next come the transoms, 6' 3" x 2' 2". These are fitted with spruce slats, which act as a spring, and 3½-inch reversible cushions in watertight pantasote covers make a dry and comfortable bed. Next forward are the sideboards, or bureaus, 15" x 17", carried up to the deck level with a rail around the top, and two large, deep drawers in each. The forward side extends right up to the cabin top, forming a bulkhead between cabin and galley, the latter being the whole width of the boat. Two feet nine inches of this is under the cabin roof, and it has 4 feet 7 inches headroom, making a larger, lighter and more commodious galley than is common to boats of this size. On the port side is the stove, and forward of that, separated by a bulkhead, is the water tank. On the starboard side is the ice box, zinc-lined, and with drainage into the bilge, and next the large dish locker, suitably divided by partitions and shelves. We use a camp chair when working here, and the whole operation of getting a meal may be done without leaving the seat. The shelf or transom on which the stove sits was carried forward under the fore hatch, forming a deck, or platform, on which, when cruising, I carry the big anchor and warp, ready for letting go in a hurry, if needed.

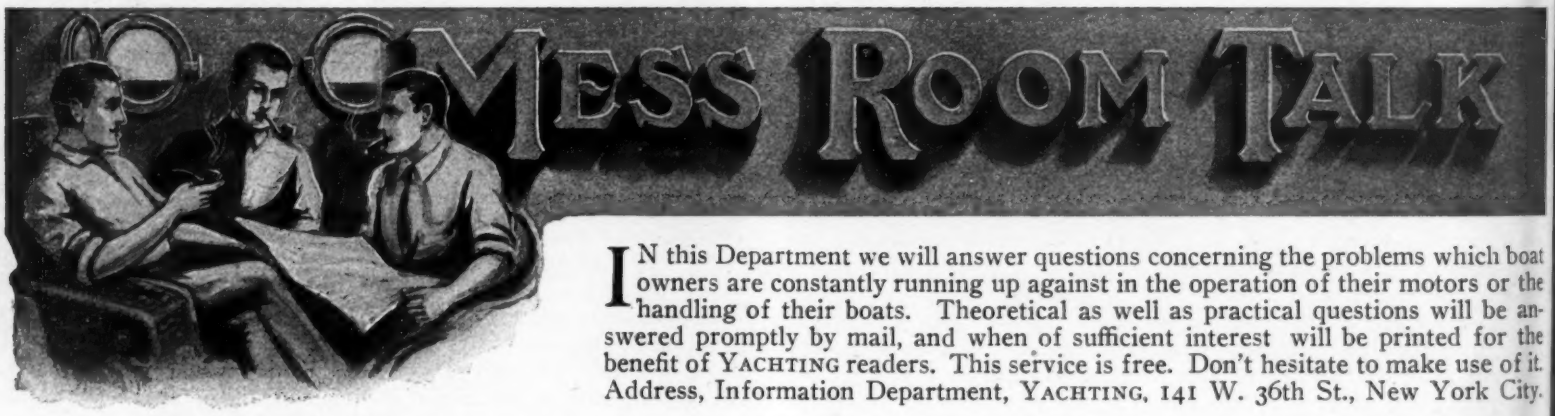
The cockpit is 6 feet 9 inches long and 5 feet wide at the forward end, and, above the floor, is made five pieces of ⅞-inch mahogany. The cabin bulkhead, sides and after bulkheads are each of one piece mahogany, cleated on the back to prevent warping. These were set into the grub beam in deck cement, and I feel sure the cockpit is really watertight to the level of the cabin doors. The two hatches clamp down with wing nuts, on thick, soft rubber gaskets, and I have not as yet been able to detect any leak in either. I may say, in passing, that a tight fore hatch does not grow on every bush, nor on many boats. Opening out of the cockpit, and under the after deck, is a locker with compartments for side and riding lights and oil can, so arranged that it is impossible for them to upset. Through a door under the companion ladder access is had to the storage under the cockpit floor, which is floored over and lighted by a dead light in the floor. A 3-inch copper bilge pump set in the cockpit floor may come handy some day, though as yet unused since she swelled up.

Other incidentals of the change were a heavy oak fiferail around the mast, with lead blocks on each side and belaying pins forward, a rugged oak mooring bitt bolted to one of the floor timbers at the heel, two extra oak deck beams, 4" x 1½", and a pair of heavy hackmatack hanging knees. The finish below is cream tinted enamel, with mahogany trimmings, mahogany-brown carpet, and Spanish leather cushions; and, of course, the whole thing looks good to me. There are two shelves under the deck on the port side and one to starboard, and these are divided into compartments to suit our individual needs, the lower one on the port side being given over to charts and the skipper's knife, pipe and tobacco. The cabin table is of the folding kind, and when in use comes flush with the starboard transom, while on the port side there is room to get by in case of a sudden call of "All hands!" Four persons have eaten at this table without seriously disturbing the peace, and ordinarily while cruising we set it up in the morning and it stands till we get ready to turn in.

Colors, Coast Pilot, course protractors, etc., are kept in a drawer beneath the starboard transom, and on the other side are palm, needles, wax, twine, marline, and the other odds and ends.

As she is, with 660 square feet of sail, main, jib and balloon halyards leading aft, jib sheets coming through the coaming and cleating on the *inside,* I can handle her easily, and from my point of view she is the ideal single-hand cruiser, perfectly balanced, able and dry, and comfortable to live aboard, with a good turn of speed. In connection with the last I may say that I was persuaded to enter her in four races, winning three firsts and one second. The total cost of alterations to hull was approximately $500. This does not include alterations to rig or the purchase of cabin fittings, lights, etc.

E. L. ARNOLD.



IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

Location of Centerboard in 16-Footer

NEW YORK CITY.

I am building a Lark, or as I have also heard them called, Long Island Scooter; length, 16 feet, beam, 5 feet 6 inches; depth amidship, 18 inches. I have already cut the centerboard slot 4 feet 6 inches from bow and 30 inches long. Do you consider this distance proper, and what distance would you advise stepping the mast from centerboard for mainsail rig only? Boat to be used on Hackensack River at Ridgefield Park, N. J., where tide runs very strong. Mainsail dimensions are as follows: Sixteen-foot boom, 8-foot gaff, 8-foot hoist and 20 leech. W. H. B.

The location of the forward end of centerboard slot, 4 feet 6 inches aft of the stem, is about right in a boat of this size. I think, however, that 30 inches is a little too short for the centerboard. Three feet would be better if you could cut your slot 6 inches further aft. If you have much windward work you will want all of this board and also as wide a board as you can get.

If your boat is to be cat-rigged with mainsail only, you would want to step the mast with the forward side from 18 inches to 2 feet aft of the forward side of the stem. The location of the mast would naturally depend somewhat on the cut of your sail, the general practice being to have the center of effort of sail about over or slightly forward of the center of lateral plane of the hull. In a little boat this will not make so much difference, and with sail well peaked up I think the position I have given would be about right, though no one can tell exactly without seeing plans of the boat or else trying her out to see how she balances.

Your sail plan looks to me to be too long on the foot. You can have a much better looking sail if you had a 15-foot boom, a 9½-foot gaff, 8 feet on the hoist, and not over 20 feet on the leech, the latter depending on the height you peaked the boom. Figuring the sail area of the sail you have given me, you have, roughly, between 130 and 135 square feet of canvas. This new sail plan would give you about 139 or 140 square feet.

Power and Pitch for a Heavy Cruiser

NEW YORK CITY.

I have a cabin power boat 23 feet 7 inches over all by 6 feet 6 inches beam, built of 1⅛-inch oak, which makes it rather a heavy hull. The engine is a two-cycle, two-cylinder Fairbanks-Morse, rated at 12 horsepower, running at 800 revolutions per minute. What size and pitch wheel would you advise me to use? I have tried an 18 x 20 wheel, which raced no matter how wide or closed the throttle was, and yet the best speed we could get out of the engine was 650 revolutions per minute. I then tried a 20 x 20 wheel, which, while it ran smoothly, held the engine down to about 550 revolutions per minute. What was the trouble? H. V.

I do not exactly understand what you mean when you say your engine "races" at 650 revolutions per minute when the normal speed of the engine is 800 revolutions per minute. An engine that races is one that turns up much faster than its normal speed, and this is an indication that the propeller is too small or of not sufficient pitch. If the engine does not turn up as fast as its normal speed the size or pitch of the blades should be reduced.

What may be the trouble, judging from the photograph of the boat you sent, is that the type of boat you have is not right for a high-speed engine of 800 revolutions per minute, the boat being too heavy to allow the engine revolutions to get up to 800. You probably cannot get 800 revolutions out of your engine in that boat unless you turn such a small wheel that it will not drive the boat.

Cost of Building and Running the 40-Foot Ideal Power Cruiser

NEW YORK.

In the issue of YACHTING, February, 1913, page 83, I have found very interesting reading regarding a 37-foot power boat designed by L. Kromholz. I would kindly ask you whether it would be possible for you to give me particulars and price on this boat. I would also thank you if you could give me an idea what the approximate up-keep expenses are on such a boat. I am looking for a boat especially adapted for cruising along the coast as far as Florida. Do you think that this boat will answer the purpose? G. T.

In regard to the cost of this boat, I would say that the prices vary so much with different builders and in different sections of the country that the range of prices is wide. I should think that from $2,000 to $2,600 would build a boat with equipment exclusive of engine. The engine itself, with tanks, etc., for a boat of this size would cost from $500 up, according to make and size. While the initial expense of building is at present high, boats of this type keep their prices very well, and there is a good demand for them in case you offer one for sale.

The approximate cost of up-keeping such a boat depends largely on the owner of it, but it should not be excessive. It is not essential to keep a paid-hand on board, although most boats of this size would have one. You can get such a man, capable of running the engine and taking care of the boat, for from $50 a month up, and found, during the season. The running expenses of the boat would depend upon the size of the engine and the number of miles which it was run. A 25-horsepower, four-cycle engine would burn about 3 gallons of gasolene an hour when under way, at a cost of about 18 to 20 cents a gallon.

Winter storage charges would amount to $40 or $50 a year, and the spring overhaul from $150 to $200, unless much work were done on the engine. I think the boat is especially well adapted for coast cruising and for going South. If properly handled she would stand almost anything in the way of weather, and could negotiate the outside part of the route from here to Florida with perfect safety.

Speed of a Small Hydroplane

CHICAGO, ILL.

I am building a 16-foot V-bottom stepless hydroplane and using a small auto-engine for power. The engine is a four-cylinder, four-cycle 3½ x 4¾ high-speed motor, that shows a block test of 25 horsepower at 1,600 revolutions per minute.

Now, I have been advised to use a 14-inch diameter by 22-inch pitch two-bladed wheel, having a 3½ or 4-inch face on the blade, and that I can expect from 25 to 28 miles per hour. If you would give me your opinion as to the size and kind of wheel to use and speed to expect I would greatly appreciate it. D. W. H. S.

The propeller suggested by you should be about right for use in connection with the high-speed automobile engine in your boat. It is possible that a smaller three-bladed propeller would give a slightly higher efficiency. For further advice on that subject I would refer you to any of the manufacturers who make a specialty of speed propellers.

I believe if you obtain a speed of 22 miles an hour from your boat you will be doing well.

Charts and Sailing Rules

Kindly quote me prices on marine maps of Hudson River, East River, New York Bay and Long Island Sound, also price on sailing rules for 18-foot launch. H. W. B.

Prices of charts you mention are as follows:

	Cents
Hudson River, New York to Haverstraw	50
" " Haverstraw to Newburgh	50
" " Haverstraw to Poughkeepsie	20
" " Poughkeepsie to Hudson City	20
New York Bay and harbor (26 x 33)	50
" " " (39 x 48)	75
Long Island Sound, Plum Island to Stratford Shoal	50
" " Stratford Shoal to New York	50

You can secure these charts from any nautical instrument dealer in New York City or vicinity.

You can secure pilot rules (which I suppose you mean by sailing rules), free of charge, from the local inspector of steam vessels, Steamboat Inspection Service, Custom House, New York City.

Correcting Weather Helm

WEEHAWKEN, N. J

Will you kindly let me know if the following sail plan is proper for a 17-foot Cape Cat, 8 feet beam and about 2 feet 2 inches draft. Area is 300 square feet; hoist, 13 feet 4 inches; head, 12 feet; foot, 20 feet. Don't know length of leach or diagonal; boat carries strong weather helm in a breeze. Do you think more sail on gaff (carrying it out to 15 feet instead of 12 feet) would make boat sail better? I've got about 700 pounds pig iron ballast at present. I notice that the 17-foot Cape Cat in the January number carries 1,500 pounds of ballast. What is the sail plan of this boat?

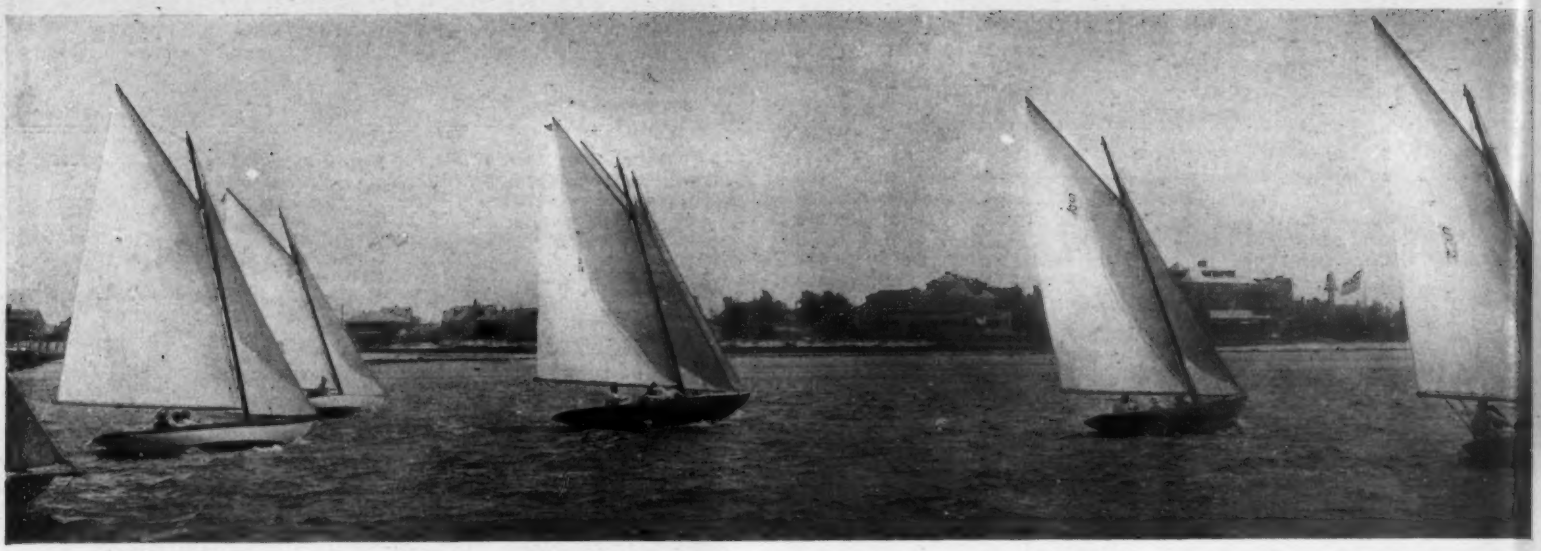
If I decided to put an iron shoe on outside of keel with centerboard slot in, what would be the proper weight and length, and would this make boat uncapsizable? M. W. T.

It is impossible to figure the center of effort of your sail without knowing the length of the leach or angle of gaff with the mast. If your boat carries too strong a weather helm the center of effort is too far aft, and can be moved forward possibly by peaking the sail up higher or making the boom a trifle shorter and the hoist longer. In other words, make a narrow sail rather than a low, wide one. As a matter of fact, practically all cat boats carry a strong weather helm in a breeze. It is hard to prevent this with the rig, and your boat may not be excessive in this respect.

The sail area of the 17-foot cat you mention is 315. I should say, without seeing your boat, that if her lines are good, and she has good bearing surfaces, that 700 pounds is enough ballast, though you can probably tell whether she is tender or not. If she is, she needs more. An iron shoe on keel will make good additional ballast, but in itself it will not make a boat of this type and draft uncapsizable.

Courtesy of the *Yachting Monthly*

THINGS WE HAVE ALL MET—THE CLEAT



A GOOD START ON GRAVESEND BAY DURING ATLANTIC RACE WEEK

The Coming Season on Gravesend Bay

Every indication points to the coming season being one of the best in the history of American yachts. After reaching a low ebb some years ago the tide has turned, and once more the flood is rushing towards the high-water mark of success. In every section of the country there are stories of increased interest in boats and boating. Men who had been weaned away by golf, automobiling and other sports, again are turning their attention towards yachts, and private signals that have not been whipped out by the breeze of summer in many a year will once more be seen floating proudly over some sail or power craft.

Like those in every other section of the country, the yachtsmen who make their home on that bit of sparkling water that lies between Fort Hamilton and Sea Gate are looking forward to a wonderfully successful year. Since the clubs that have their homes on Gravesend Bay went out of commission last September, a dozen or more things have happened that will make all yachtsmen watch the lower bay with unusual interest.

One club has passed beyond the horizon, another has come into existence, and still another organization has placed its burgee over a new and a handsomer home. Again there is a wonderful activity in the building of boats for Gravesend Bay sailors. A half a dozen and more new racing craft will take part in the weekly regattas that will be sailed below the Narrows, and each one of the craft will create endless discussion until her merits or faults are known.

Several years ago the Brooklyn Yacht Club elected a commodore who was exceedingly desirous of leading the foremost yacht club in the world. He was not satisfied with the honor of being the senior flag officer of the oldest incorporated yacht club in the country, but announced that his organization also should be rated as the most important in the nation. It was a worthy ambition and one that appealed to the hearts of every member of the club. Unfortunately, the commodore believed that a national club should have a national name, and being a new member, who had little or no sentiment for a cognomen that was famous from Maine to California, the new senior flag officer had the Brooklyn club change its name to the National Yacht Club. Not only was the name changed but the organization moved into newer quarters on the shores of Gravesend Bay. The additional expense, together with the fact that the new name was not popular with the older members, in the end caused the organization to run foul of the shoals of bankruptcy, and the club was forced to wind up its affairs last winter.

The older members had no intention of letting the ship founder, and as soon as the National Yacht Club passed out of existence a committee was formed to reorganize the Brooklyn Yacht Club. At a meeting a month ago it was decided to gather together the more congenial spirits, and with nominal dues to support another Brooklyn Yacht Club. Of course, the organization is without a home. However, that will not prevent it from taking an active part in lower bay yachting, or will it stop it from holding one championship race on Gravesend Bay this summer.

Peculiar indeed is the working of Fate. About a dozen years ago an organization was formed on Gravesend Bay that had its birth in a disagreement among the members of the Brooklyn Yacht Club. The new organization called itself the Bensonhurst Yacht Club, and its roster was made up of actual racing men. There were very few rocking chair sailors among the Bensonhurst men, and although their membership was small the club always managed to win more than its share of prizes. An organization that is made up of real sailors is bound to prosper. Each year saw the Bensonhurst Yacht Club taking a more important place in the American world of boats. Soon the club outgrew its home on the end of the long pier at Ulmer Park, and looking around for larger and more commodious quarters the Bensonhurst tars began to cast envious eyes at the home of the National Yacht Club. Now comes the irony of fate. When the parent club sank beneath the surface the lusty offspring moved into the former home of the National Yacht Club, and now the burgee of the Bensonhurst Yacht Club is flying over Westlawn, one of the handsomest club houses on Metropolitan waters. With the taking of a new home the Bensonhurst Yacht Club grew wonderfully in membership and strength.

Notwithstanding the signs of activity that are noted along the east shore of Gravesend Bay, the Atlantic Yacht Club, the big Sea Gate organization that is the leader of all racing activity on the lower bay, is also making plans for the summer that indicate that the coming season is going to equal, if not excel, the many successful ones of former years.

Believing that yachtsmen are children of habit, the Sea Gate sailors have arranged no novelties for the year. Once more they will bend their efforts toward making their annual race week the last of August the most important yachting fixture on Long Island. It is astonishing how successful the Atlantic's have been with their annual classic. Although its geographical situation is such as to make it exceedingly difficult for yachts to reach Sea Gate from the other big centers, the club always manages to hold an excellent week, and the racing is as keen and as interesting as that seen in the big "weeks" on Long Island Sound and Massachusetts Bay.

The other clubs that form the Yacht Racing Association of Gravesend Bay also are looking forward to a splendid season. The feature of the year at the New York Canoe Club will be a race for the International Challenge Cup for canoes. There was a time when this trophy furnished the best of sport. Of recent years, however, canoeists forgot that the old mug was in existence, and it was a decided surprise for the members of the New York Canoe Club to receive a challenge from Canada. It is expected that five or six hundred canoes will take part in the elimination races to pick the American defender.

Yachting also is booming at the Marine and Field Club. The building of a long pier off the grounds of the club has given the members of the organization an excellent starting and finishing line, and that has done much toward helping the regattas of the club. Their course is now even better than the one at Sea Gate, for the boats are in view at all times from the Marine and Field Club dock.

The Crescent Athletic Club is the only other organization in the Association. Unfortunately the New Moon tars have no quarters on the lower bay and they have to sail their races off the Atlantic Yacht Club. The Crescent Club, however, is an enterprising organization, and although it has only a few boats that fly its burgee in races it has succeeded in doing a good deal toward keeping up interest in the sport.

The Q division is the star class of the lower bay. For years the 27-footers have reigned supreme there. This summer the sport promises to be even more interesting, as three new boats have been built for the class. All are for members of the Atlantic Yacht Club. J. Stuart Blackton, the energetic commodore of the club, is the owner of one. Heretofore Commodore Blackton principally has been interested in motor boats, and his advent into the windjamming game came as a welcome surprise. The senior officer acknowledges that he knows nothing about a sailboat. He, however, is desirous of learning, though he has no intention of entirely withdrawing from the motor boat game. Another motor boat enthusiast who has taken to the sailing craft is A. E. Smith, owner of some of the fastest screw-driven craft in the country. The third new recruit is Peter W. Rouss, owner of the Winchester. Like Commodore Blackton, these yachtsmen know nothing about the sailboat game, but each is exceedingly desirous of becoming a sailorman. Owing to a change in his plans Mr. Smith's boat may not be out until later in the season.

The Q class will have more than its share of important cups this summer. In addition to the Thompson Trophy, which has been the principal incentive for the Q racing during the past few years, handsome trophies have been offered by the Atlantic and the Seawanhaka-Corinthian Yacht Club of Oyster Bay. In all there will be from ten to a dozen Q boats in the racing game, and practically all will be found enrolled in the clubs of Gravesend Bay.

A smaller class, although one that promises just as much fun, is the "Bird" division, which was promoted last winter to boom interest among those who could not afford to race the 27-footers. The division is the same as the Bayside "Birds" which did so well on Long Island Sound last summer. Although the type may not be the best for lower bay conditions, the boats form an excellent little class, and as they are identical with the Sound creations there is bound to be considerable inter-sectional racing.

LOUIS DE CAVANOU

LL MOON, WINNER OF LAST YEAR'S P. I. P. B. A. LONG-DISTANCE RACE

THE PRINCE RUPERT YACHTING CLUB USES A RETIRED RIVER STEAMER FOR A CLUB HOUSE

AILSA, OF THE ROYAL VANCOUVER Y. C., A POPULAR TYPE ON THE PACIFIC

What the Pacific Northwest Will Do in 1913

On the Pacific Coast natural boundaries and conditions favorable to special types of pleasure craft within those boundaries separate the seaboard into three divisions, with wide stretches of open sea washing unfriendly coasts between.

San Francisco and other California ports bordering on the open ocean have developed the ocean-going cruiser and supply most of the contestants in the ocean races on the Pacific. Further north the Columbia River, with its hundreds of miles of smooth water, has pre-eminently developed the speed boat, and there many of the important contests in this class have been held, while to the Gulf of Georgia and Puget Sound belong the mosquito fleet of auxiliary yachts and power cruisers. With a cruising ground of inland waters reaching as far north as Alasaka, with only one or two short breaks in the chain of sheltering islands where the ocean swell can reach the mainland, and a coast line of 7,000 miles in British Columbia alone to explore, the rapid development of the cruising yacht and motor cruiser is hardly to be wondered at. Last season the fleets in these last-named waters were increased by the addition of many large power cruisers and motor boats, but the windjammers had scarcely any additions to their ranks. A number of former Seattle and Victoria yachts are now owned in Vancouver. This winter there has been a lull even in the building of motor craft, but with the boats already in hand 1913 should be a good season if the yacht owners do their duty by their clubs and feel a personal responsibility for making the game a success. Stagnation is the only alternative to racing in a yacht club.

The Royal Vancouver Yacht Club has under its burgee a fleet of 141 vessels of all classes with a net tonnage of about 1,800 tons, including three steam yachts, 27 power cruisers of 50 feet or over, 35 cruising power boats under 50 feet, and 21 launches. In the sailing classes there are 35 cruising yachts, half of them having the yawl or ketch rig, and most of the remainder sloop rigged; 13 racing yachts, including all of the contenders for international honors in the 29-foot class on the Coast, while 7 other sailing craft, principally auxiliaries, complete the list.

The North Vancouver Yacht Club, also located on Burrard Inlet, has a growing fleet of power cruisers and a few auxiliaries and small sailing craft. Besides these a Dinghy Racing Association affiliated with the yacht clubs promotes the interests of the 12-foot racing dinghy class, and a race of these midgets is generally one of the attractions of regattas.

Commodore B. T. Rogers, to whom much was due for the successful racing in the Royal Vancouver Yacht Club last season, has gone in by acclamation for 1913, together with Rear Commodore "Bill" Breeze, who cheerfully carried the heavy end of the stick at most of the club regattas, for which his fellow yachtsmen have been duly appreciative and have conferred on him the honor of doing more of the good work for the club.

Victoria Boat Club, with a new club house to be ready for this season, is planning a busy year with a big regatta in Carnival Week, August 4 to 9. The Victoria fleet is made up largely of motor boats, though they have some healthy auxiliary cruisers, one of which, the Natoose, participated in the last trans-Pacific race from San Francisco to Honolulu.

Though many of the Seattle racing fleet, including the two Spirits, Simona and Imp, now fly the British flag, there are some fine cruising yachts left there which are a pleasure to meet under any conditions, among them being Gwendolyn II, winner of second prize in one of the trans-Pacific races, and until this winter champion of her class on the Sound, and Ortona, a new yawl which wrested this championship from her this winter.

Challenges from the Seattle Yacht Club for the Alexandra Cup in the 8-foot class, International Rule, and also from the Royal Vancouver Yacht Club, were in by the end of 1912. The cup at present is in the hands of the trustees, both contesting yachts having been disqualified at the last international regatta held at Seattle. The present position is that all the boats built to this class on the Coast, excepting the Rival, which was broken up, are now owned in Vancouver. So far there is no word of a boat in Seattle to back up their challenge; but as the challenge had to be in by the end of the year to make a race possible, the posting of the challenge would guarantee them a race for any boat they might secure.

The old Hudson's Bay Company's river steamer Hazelton is now doing service as a club house and mooring float for the Prince Rupert Rowing and Yachting Club at Prince Rupert, B. C. The memories which that hard-used hull call up should stimulate the racing spirit of the club. Few tales of reckless daring surpass the exploits of that stern-wheeler in the early days of steam navigation on the Skeena River, when, under the command of Captain Bonsor, as an independent boat she raced against the Mount Royal and other competitors owned by the Hudson's Bay Company on a river where navigation at the best is dangerous and difficult. It took from three days to a week to make 150 miles up stream, and if the water was a little too high or too low navigation past certain points was impossible.

The Prince Rupert Club has a fleet of 14 launches and several small sailing yachts, but owing to its isolated position has not so far been able to organize any competitions with other clubs, though it has held a number of interesting club power boat races.

P. I. P. B. A. LONG-DISTANCE RACE

At a meeting of the Pacific International Power Boat Association, held at Tacoma, Wash., on March 29, it was decided that the course of the long-distance race for cruising power boats for the P. I. P. B. A. trophy, emblematic of the International Championship of the Pacific Northwest, should be from Olympia, Wash., to Victoria, B. C. The race will be started from Olympia on Saturday morning, August 2, so as to give a daylight run as far as possible, the course being only about 150 miles. The finish will likely be off the outer wharf at Victoria. This date was chosen as it would allow any of the boats that desired an opportunity to remain for the regatta at Victoria during Carnival Week, August 4 to 9.

This challenge cup is at present held by Full Moon, owned by Mr. Knox Walkem, of the Royal Vancouver Yacht Club. She won it in 1912 over a course from Vancouver, B. C., to Tacoma, Wash., in a well-contested race, with Wyrill, owned by Mr. W. A. Bauer, also of Vancouver, in second place, and a representative fleet of British Columbia and Puget Sound boats giving them an exciting run for the cups. Last season cups were given outright for first and second besides the perpetual challenge trophy.

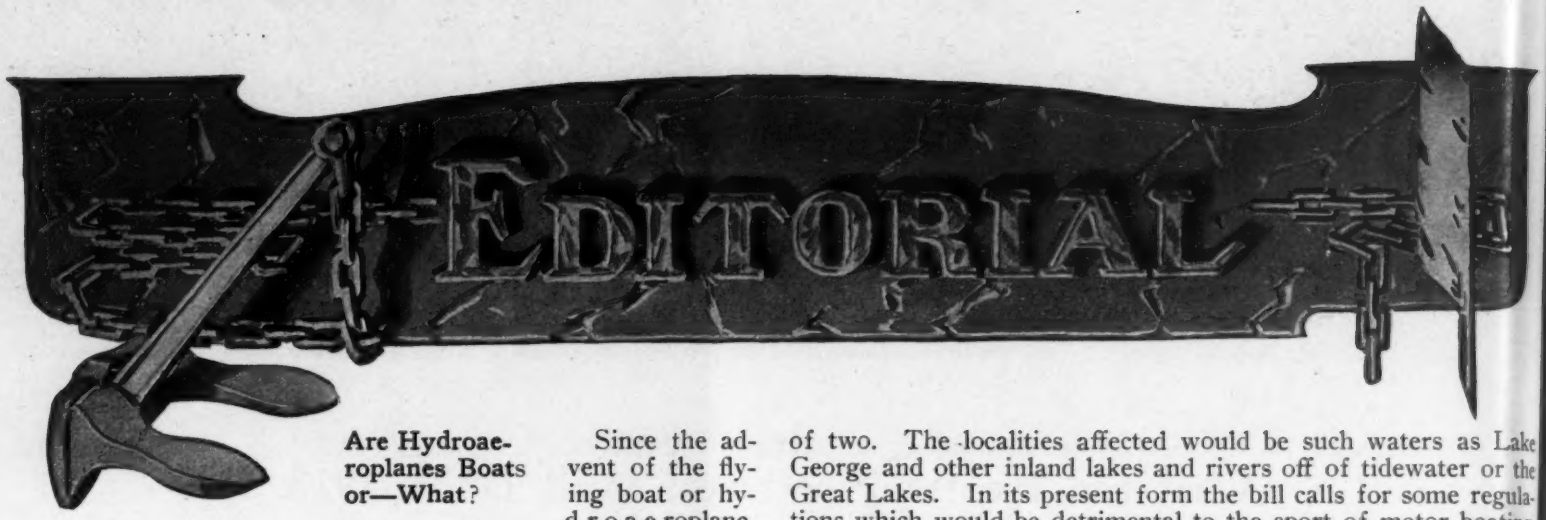
As some of the men who raced last year think they can alter the trim of their boats slightly to get a better rating or increase their speed, a good contest is looked for this season. The daylight run is also likely to appeal to many of them. Tacoma looks to Corsair, flagship of Commodore Jacobs, of the P. I. P. B. A., to bring her back the emblem of power boat supremacy in the cruiser class which she lost last year. The time allowance for this race has been cut 20 per cent since last season, which should favor the Tacoma boat.

SIR THOMAS LIPTON CHALLENGE CUP

This cup, presented by Sir Thomas Lipton to the Seattle Yacht Club for the encouragement of international racing on the Pacific Coast, has been put up by the Lipton Cup Committee of the Seattle Yacht Club for competition between Class R yachts under the Universal Rule. The deed of gift vests the ownership of the cup in the Seattle Yacht Club, and provision is made for returning it to that club after three years if there are no contests in that time between the boat holding it and challengers in this class. The cup is to be won on the greatest number of points figured on a percentage basis. Three consecutive days of racing are provided, the course on the first day being an equilateral triangle of 12 miles, the second a course to windward and return, and the third the same as the first. Before the first of January each year dates must be set for the next contest. Suggested restrictions for this Class R yacht are that she shall have iron outside ballast with 200 pounds of lead inside for trimming, cotton working sails, solid spars, a cabin trunk not less than 20 feet in area and not less than 6 inches above the deck; also that no pot lead be used.

A communication setting forth these rules and restrictions was forwarded to the Royal Vancouver Yacht Club by the Lipton Cup Committee of the Seattle Yacht Club, and placed before the annual meeting of the R. V. Y. C. The size of boat proposed met with favorable comment from the members, and the new executive was empowered to appoint a committee of three to go into the matter of restrictions with the Seattle club. It is not likely that at this late date any contest can be arranged for this year.

G. B. WARREN.



Are Hydroaeroplanes Boats or—What? Since the advent of the flying boat or hydroaeroplane, with the attendant prophecy that it is going to attract many yachtsmen, and in particular those who have a penchant for fast motor boats, there has been much activity among those interested in promoting this sport. We have had numerous requests from manufacturers and from editors of magazines devoted to aeronautics asking whether the flying boat, as at present built, would be eligible to race in any of the motor boat races held under the auspices of our leading power boat associations. In other words, they put up the question whether a hydroaeroplane is a boat or a flying machine.

Undoubtedly such craft can be barred out of power boat races held under the A. P. B. A. rules, as these rules define a hydroplane, under which type the flying boat would undoubtedly have to be classed, as one whose propeller acts in or against the water. Be that as it may, it would be interesting to see a regatta between classes of flying boats, and possibly also between classes of this type of craft and the best exponents of the hydroplane. The speeds of the two types, where the hydroaeroplane does not actually leave the water, are not far apart, and a contest between them would certainly attract a great deal of attention. Supporting air planes on a speed boat are no new thing, but up to the present they have never been carried to the state that they have been on the flying boats.

The whole question is one that different motor boat associations can well afford to take up, if for nothing else than to so frame their rules as not to allow boats designed primarily for use in the air to break up the existing classes of speed boats built for use on the water alone.

Though it is too early to prophesy as to the future of these boats, they will undoubtedly develop, and, as a pure and simple sporting proposition, should make a very definite appeal. The possibilities of these flying craft are unquestionably tremendous, and it is natural that this appeal should be felt more strongly by those whose tastes run towards the water sports. Already a cruising race of 1,000 miles in length has been planned for next summer, the course being laid down along the Great Lakes, and this will be watched by boatmen the world over with a great deal of interest.

For State Control of Motor Boats With the prevailing tendency towards new legislation regarding the control of motor boats, hardly a month goes by that some Federal or State bill is not brought up for discussion or dissection, with the consequent agitation which it carries with it. The present one relates to the State of New York, where a bill has been introduced into the Assembly with reference to the regulation of motor boats on waters under the jurisdiction of the *State*, which embraces all those waterways not covered by Federal regulations.

This time the general intent of the bill seems to be to make the State regulations coincide with those of the Federal Government, which in itself would be a very good thing, as it would tend to simplify the whole matter of equipment, inspection, navigation rules, etc., by having one general set of rules instead of the conflict of two. The localities affected would be such waters as Lake George and other inland lakes and rivers off of tidewater or the Great Lakes. In its present form the bill calls for some regulations which would be detrimental to the sport of motor boating, and in these respects is inimical to the best interests of the users of pleasure boats, and all yacht clubs should make a united effort against the *hostile* parts of this bill. The measure in question is Bill 1540, introduced by Mr. Farrell and now pending before the Senate and Assembly at Albany.

No More Port and Starboard In an order recently issued by the Navy Department of the United States, the death knell of those ancient and time-honored expressions, port and starboard, was sounded, and in their places are to be used in the navy the prosaic words, right and left. To old sailormen, and even to those who have only followed the sea in the latter-day steam vessel, this news will come with a distinct shock, and they will doubtless wonder what is coming next in this age of change and innovation. First, it was dropping the 32 compass points in favor of degrees; now, it is using right and left to denote the sides of a vessel; next, it will probably be front and back instead of forward and aft; and, after that, it will probably be upstairs and downstairs instead of below and on deck. But the edict has been issued in the Navy Department, and will doubtless be obeyed in the ships of the navy, and it is thus the entering wedge that will eventually lead to the disuse of the old terms.

It is said that this last change has been contemplated by the general board of the navy for some time, and it is done for the purpose of eliminating all possible danger of confusion on the helmsman's part, it being claimed that the direct action on the helmsman's mind of left and right is more positive than the use of the indirect words port and starboard. It is doubtful, however, if this contention holds true to the man who has followed the sea. The use of the words port and starboard become as second nature to him, and there is probably no indirect action in indicating to his mind their meaning. As a matter of fact, a real sailorman knows instinctively, when an order is given to him at the helm, what it meant, and does not have to translate the language in which the order is given into different terms to make their meaning clear. However, the order has gone forth, and the ancient words, rich in association and always indicative of ships, must yield to common usage of this practical age; they have lost their usefulness, and they do not fit the ships in these days of steam and electricity.

We doubt if the old custom will die easily, and hope it will not. Possibly in the steam merchant marine the use of the new terms will eventually make headway, but they never will on sailing vessels, or with the old-time sailormen and shellbacks. As a matter of fact, the old words are less confusing than the new words, and it will probably be a long time before the lookout on the forecastle head reports to the bridge that the "right and left lights are burning brightly, sir," when reporting on the condition of the side lights, or before a mate will tell a seaman to "rouse the right watch out." Certainly the words are no easier of understanding than the old terms.

It is said that the change has been adopted already in most of the other navies of the world and we are hopelessly behindhand in making the change.

THE NEW ATLANTIC CITY YACHT CLUB JUST BEFORE COMPLETION

THE CHELSEA SPECIAL, CHAMPION OF SOUTH JERSEY

Driftwood from Alongshore

The New Atlantic City Yacht Club

Among the stories of the growth of what are now famous yachting organizations in Eastern waters, none is more interesting, perhaps, than the evolution of the Seaside Yacht Club.

Twenty years ago a small bunch of men who sailed the bays back of Absecon Island, in the homely but seaworthy sneak-box, got together, because they wanted to find out who owned the fastest "ship," and called themselves a yacht club; which title was premature, to say the least, because at first there was no real club—just a slip to tie up to, and the hope that some day the organization would be big and important. But these fellows had lots of fun, for every Saturday afternoon a race was pulled off that created rivalry and gave them something to talk about the rest of the week. The fleet of sneak-boxes grew, and a new class of craft made its appearance in the "mosquito" boat, and with the increasing number of skippers a nice little club house was erected on Clam Creek, just off Absecon Inlet. It contained a ship room, a mess room, a few bunks and some lockers; but it was a fine club then.

Exciting races in the mosquito boat and sneak-box classes were won and lost in the early days. They were sailed over the rough waters of Absecon Inlet, and the name of the Seaside Club was very quickly a recognized factor in the racing world. Seamanship and sportsmanship developed rapidly; one or two big yachts were built and were anchored off the club. Open races were arranged for all sailing classes under 40 feet, and the sloops from Beach Haven, Island Heights and Seaside Park swooped down the coast and carried back the prizes. The first champion in those days was the Happy Princess, a beautiful little Herreshoff 30-footer, and in Gus Parker she had a skipper that understood her, and who could send her over the line a winner three times out of every four. Her heels were always visible to the best of them from Barnegat Bay and the members are proud of her yet.

That was in 1905, and ever since the little club has been famous for the champions it has produced. Its prestige has been made because of the club's devotion to racing, exclusive of every other feature of club life, yet it cannot be said that any visitor ever received a cold reception. The club's doors have always been wide open to the stranger on the high seas, and on regatta days the little club house was alive with social activity. In the assembled fleet could be seen the flag of nearly every yacht club along the coast.

With the advent of the motor boat and its immediate popularity, the Seaside Club still held its prestige, and the Philadelphia-Havana-Atlantic City race three years ago is the most notable big racing event that the club has put through; since then it has produced a big fleet of racing hydroplanes. Two years ago the club flag flew on the Sandburr II, which brought home many championships from Huntington Bay, Peoria and elsewhere. Last season the club was right there with the fastest hydroplane in South Jersey in the Chelsea Special. This powerful craft was unbeaten in fifteen races. So it came about that two years ago the Seaside Club reached its limit. There wasn't another single inch of space in the club for the cups and trophies that had been won. The popularity of the club made bigger quarters imperative, and the thousands of yachtsmen sailing the waters in and about Atlantic City made a big club house a necessity. A holding company was thereupon formed to create a yacht club for Atlantic City that would adequately meet the demands of the yachting interests; that would make Absecon Inlet an attractive point to cruising yacht owners, and that would promote big racing events. This company worked with a zeal, and in 1912 a beautiful site was secured fronting directly on Absecon Inlet and along the water front by the City Park. This move was the beginning of better things, but the finish of the *old* Seaside Yacht Club.

Plains and specifications for the new quarters were prepared last fall, and with the beginning of the new year ground was broken, and at this writing a handsome $20,000 club house is rising majestically over the waters of the Inlet. It is to be completed by Decoration Day, and by July 4, which is the date set for a big open race, the house and grounds will be in readiness for the season. The greatest feature of the interior arrangement is an immense ball room that occupies all of the second floor space, and right in this room society will break loose for the first time on the eve of July 4, and the next day will follow a big open regatta.

The new club has taken the flag and the entire membership of the old Seaside Yacht Club, but the name of the old organization has not been continued. In April the new officers completed all necessary formalities and the organization assumed the name of Atlantic City Yacht Club. In reality the new organization will be a yacht club that will fittingly represent Atlantic City and the Jersey waterways, and its officers and members are determined that it shall in every sense of the word compel Atlantic City to be recognized by the Eastern yachtsman as a port of entry where he will find hospitality, comfort and good friends. RALPH HARCOURT.

Programme of the Perry Centennial Regatta

Plans for the big regatta at Put-in-Bay, Lake Erie, next summer are taking shape, and we are giving below a detailed list of the various classes that will be taken care of during the two weeks of racing. As has been stated before, the National Association of Boat and Engine Manufacturers' Championship Races, heretofore held on the Hudson River, or in the vicinity of New York, will be held this year at the Perry Centennial Regatta during the week of July 30 to August 2. The following is the programme as tentatively made out:

INTER-LAKE YACHTING ASSOCIATION

Sail Yacht Week, July 20-27, 1913—

Class A, modern cruisers, 33 rating and over.
Class B, modern cruisers, under 33 rating.
Class D, veteran cruisers.
Class F, 21-footers, restricted.
Class H, 18-footers, restricted.
Class J, 16-footers, restricted.
Class L, 14-footers, restricted.
Class K, catboats, restricted.
Class P, restricted.
Class R, restricted.

INTREPID II, ONE OF THE SEMI-SPEED BOATS

CYBELLE, A STAUNCH LITTLE CRUISER OF THE ATLANTIC CITY YACHT CLUB

Class Y, yawls. Obstacle catboat race.
Catboats sailed by ladies.

Prizes for the above aggregate $5,000

For further particulars address Commodore G. H. Gardner, chairman Sail Yacht Regatta Committee, Caxton Building, Cleveland, Ohio.

Power Boats, July 30-August 2, 1913—

For United States Championship—Cruiser Handicap and Scratch Races

Class, 30-footers, length over all. Class, 70-footers, length over all.
Class, 40-footers, length over all. Class, 80-footers, length over all.
Class, 50-footers, length over all. Class, 90-footers, length over all.
Class, 60-footers, length over all. Class, 100-footers, length over all.

Speed boats, runabouts and open launches capable of making 15 or more miles per hour.

Speed Boat Handicap and Scratch Races

Class, 20-footers, length over all. Class, 32-footers, length over all.
Class, 26-footers, length over all. Class, 40-footers, length over all.

All class races to be governed by the "bang-and-go-back" plan.

Prizes for the above aggregate $5,000

For further particulars regarding all power boats address Commodore Charles W. Kotcher, chairman Power Boat Regatta Committee, 639 Gratiot Avenue, Detroit, Mich.

Aviation Week, August 17-24, 1913.

Inter-Lake Yachting Association.—George H. Worthington, commodore; Otto Nehrenst, secretary-treasurer, 234 Lockwood Avenue, Cleveland.

New Boats Building

Messrs. Stearns & McKay, of Marblehead, Mass., have in their shops nearing completion the new 76-foot houseboat for Henry A. Morss, of Boston, on the lines of a caravel of the 16th century, the plans of which appear elsewhere in this issue. They also have under way four one-design sailboats, 26 feet over all, 17 feet on the waterline, 7 feet beam and 4 feet 5 inches draft, designed by Swazey Raymond & Page for the following gentlemen: H. L. Pratt, E. S. Webster, H. W. Harris, E. W. Whittemore. These boats are very much like the Eastern Yacht Club one-design class, have a small cabin forward, with easy lines, sharp sections, and carry about 335 feet of sail.

Former Commodore Robert E. Tod, who sold his big schooner Karina during the winter, has given Herreshoff an order for a new 115-foot waterline schooner of the Westward type for delivery in 1914.

Recent Yacht Sales

Messrs. Gielow & Orr have sold the twin-screw steel yacht Actus for Mr. George W. Childs Drexel to Mr. E. B. Dane, of Boston, and have also disposed of Mr. Dane's 135-foot auxiliary schooner yacht Cone to Mr. George S. Steere, of Chicago. The same firm has sold the 48-foot cruising motor boat Selma, Mr. C. F. Ackerson, Bayshore, L. I., to Mr. Holman Day, of Portland, Me.; the auxiliary yawl Imp, Mr. C. E. Burden, to Mr. W. A. Wight; the Sonder class sloop Alarm, designed and built by the Herreshoff Company, Mr. M. A. Potter, to Mr. S. C. Hunter, of New York, and the Class S sloop Blue Bill to a New York yachtsman.

The following sales have been transacted through the John G. Alden Yacht Agency, of Boston, Mass.: Mr. Edward C. Marsh, of New York City, has purchased from Mr. William E. Russell, of Boston, Mass., the 27-foot sloop Anthea; the schooner yacht Gerfalcon, sold for Mr. George B. Upham to Worcester (Mass.) yachtsman; the yawl Polly, Dr. E. M. Montgomery, to Mr. J. W. Kendrick, of New York.

The Boston Marine Agency has sold the 27-foot waterline yawl Primrose II for George M. Amerage, Boston, to Mr. W. E. Taft, of Providence, R. I., and the Crowninshield-Lawley knockabout Auk for Mr. E. J. Foley, Boston, to Mr. Howard E. Barlow, of Providence.

The Hollis Burgess Yacht Agency has sold the 60-foot motor boat Karn, owned by the estate of Charles Dennison, of Boston, to Miles L. Carter, of Attleboro, Mass.; the 44-foot motor boat Princess, owned by Henry W. Harris, of Chestnut Hill, Mass., to Samuel H. Holman, of Attleboro, Mass.; the 38-foot motor boat La Reine, owned by Herbert M. Plimpton, of Norwood, Mass., to Commodore Charles A. Blaso, of the Winthrop Yacht Club; the 30-foot motor boat Bob, owned by Arthur E. Stohlbom, of Boston, to Edwin A. Sayward, of Brookline, Mass.; the 25-foot waterline sloop yacht Irolita, owned by Walter K. Shaw, of Concord, Mass., to a member of the Boston Yacht Club; the catboat Arbutus, owned by A. L. Merritt and C. W. Hall of Quincy, Mass., to F. W. Goeller, Jr., of New York; the yawl Zara, owned by Manton E. Merchant, of New York, to Ralph L. Colton, of Philadelphia; the 21-foot waterline racing sloop Opitsah III, owned by Elmer F. Smith, of Boston, to J. M. O'Brien, of South Norwalk, Conn.; the champion Eastern Yacht Club 17-foot Knockabout Scarab, owned by Caleb Loring, of Boston, to a member of the Boston Yacht Club.

Seminole Wins the Southern Championship

The motor boat racing season in the East opened April 1 at St. Augustine, Fla., with the annual regatta of the St. Augustine Power Boat Club. The principal event was the Southern Championship, though races were provided for a number of other classes. Interest centered in the championship event, which resulted in a very close race between Adelaide and Seminole. On the last day's racing, Seminole and Adelaide, each with one leg in the 35-mile handicap, were disqualified on the tenth lap for apparent jockeying. It was decided that each boat must carry a judge over two laps to test the boats at their best speed and rehandicap them, and that they then cover a 10-mile course. The Adelaide got 4 seconds' handicap and 6 seconds' penalty for overspeeding in one lap. The Seminole won by 4 seconds, and the championship goes to Jacksonville, as well as the three cups won by the Merry Widow.

SEMINOLE, WINNER OF THE SOUTHERN CHAMPIONSHIP AT ST. AUGUSTINE

The Seminole is owned by M. C. Hutto, of Jacksonville, Fla., and is powered with a 25-30-horsepower auto-marine type Buffalo motor, which in the last race drove her over the course in 1 hour, 1 minute and 17 seconds.

Fine Prospects on Chesapeake Bay

More than usual interest has been aroused in sailing on Chesapeake Bay through Commodore Alfred I. du Pont, of the Cambridge Yacht Club, purchasing the sloop Sue and issuing a challenge to the Corinthian and Baltimore Yacht Clubs. The Corinthians have accepted the challenge and will send the sloop Helen to represent them. It is possible that by the time the first race is held on June 9 the Baltimore Yacht Club will have a Class P sloop to represent them, so the event will be three-cornered. To add to the importance of the races, Phillips Lee Goldsborough, the Governor of Maryland, who is rear-commodore of the Cambridge club, has offered a handsome cup to be known as the Governor's Cup.

In connection with the race for this trophy the Cambridge club will also hold its third annual regatta, and there will be classes for all types of motor and sailing craft. The feature of the regatta will be the using of an elliptical course, carefully staked off. This will be the first attempt to get away from the usual kind of course for motor craft, and the results will be carefully observed.

The coming of the two M Class yawls to Baltimore will also increase interest in sailing. Mr. H. G. Merry and Mr. John H. Robinette, both of the Baltimore Yacht Club, have purchased the Vesta and the Rainbow, respectively. The latter was a sloop but her rig has just been changed.

The Baltimore Yacht Club will be the first to go into commission this year, their opening being set for May 10, at which time there will be a reception at their new home on the Patapsco River. The club has now reached its limit of membership, and its fleet is steadily increasing. One of the notable power boat additions is the Achelous, 75-footer purchased by Mr. A. Stanley Zell.

The Corinthian Yacht Club will go into commission May 30, when its annual regatta will be held, during which the Decoration Day Cup will be raced for, no less than four men having each won two legs on it. This ought to be the deciding race.

The Maryland Motor Boat Club anticipates an unusually good season. There have been several additions to the fleet, notably Mr. Louis Kahn's 100-footer Tuscanola, which he has renamed Kanised, and Mr. Jacob Mayer's 55-footer Leugo II, which he has renamed Almax II, and Mr. Benjamin Friedenwald's 50-footer Bumble Bee. The club has outlined an active racing season. The first race will be a club affair on July 4-5. The ranking affair of the season, however, will be the annual 200-mile race to be held on July 25. This event will be open to any motor boat on the Atlantic coast, and there will be three classes—45 feet and over, less than 45 feet, and glass cabin cruisers 40 feet and over. The three new craft will no doubt make the races this year more interesting than ever.

The Baltimore Motor Boat Club devotes most of its attention to cruising, but there will be two 13-footers of the Bumble Bee type. One of these was built by Mr. Fred Westerkam and the other by Mr. August Roloson. These little boats will be sent to the Cambridge regatta to meet a fleet of Bumble Bees being built there.

The Capital Yacht Club, which now maintains a summer anchorage at Annapolis, will have a new 21-footer flying the colors of Jack Flower, and she will be sent against the Ojigwan of the Chesapeake Bay Yacht Club, which club will again have the Vingt-Trois to meet the Eleanor of the Baltimore Yacht Club.

VALENTINE'S
VALSPAR
The Varnish That Won't Turn White

Varnishing for Lasting Results.

Practical Hints for Boat Owners.

Varnishing New Work

First see that the wood to be painted or varnished is perfectly clean and dry.

Open-grained woods, such as oak, ash, mahogany, and walnut, should have a coat of good mineral paste filler.

Close-grained woods, such as cherry, birch and maple should have a priming coat of Valspar, thinned with 1/5 pure turpentine.

Twenty-four hours after, apply a full flowing coat of Valspar. Fill the brush well, flow the varnish on, and do not brush out much. This is important.

All-told apply three flowing coats of Valspar, allowing twenty-four hours between coats. It dries hard in twenty-four hours.

Caution: Never use shellac as a primer or filler for surfaces which are exposed to the weather, moisture, or hard knocks. The brush must be absolutely free from grit, oil, or grease. Use a new brush preferably.

Revarnishing Old Work

Removing Old Coatings: The best and safest method of removing old varnish is to scrape with a metal scraper or broken glass. If the old varnish has perished and almost all gone, rubbing with steel wool or sandpaper will do. Old paint should be burned off.

Caution: If a liquid varnish-remover is used be sure to wash the entire surface thoroughly with benzine or petrol before applying the coat of paint or varnish. This is vital, as a varnish over a surface from which old coatings have been removed with a liquid remover and not cleaned off, is liable to perish soon.

Applying Varnish: When all old varnish has been carefully removed fill the brush well and flow on a full coat without brushing out much. Apply three coats, allowing twenty-four hours between coats.

Bleaching Weather-Stained Wood: Scraping or planing is the safest method of removing weather stain. If oxalic acid is used for bleaching, this acid must be neutralized by an alkali before varnish is applied or the life of the varnish cannot be depended upon. To neutralize the oxalic acid, wash it off with a solution of ammonia or soda and hot water. One tablespoonful of either to a pail of water. Then rewash the whole surface with plenty of clean warm water.

To maintain a fine finish, having thoroughly refinished in the spring, apply one coat of varnish towards the end of the season. This is an added protection to your boat during the winter.

Complete refinishing is not necessary every year,—when Valspar is used. The following spring a full flowing coat, applied after a light sandpapering and touching up of the worn spots, will suffice.

Copy of our new booklet, "Valspar for Boats," mailed on request. Use the Coupon.

VALENTINE & COMPANY

Established 1832

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TRADE VALENTINES VARNISHES MARK

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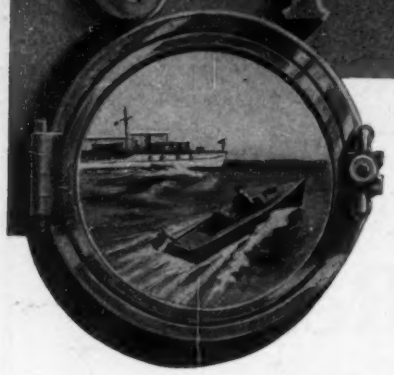
Send me, free of cost, copy of booklet, "Valspar for Boats."

OF INTEREST TO THE SKIPPER



A Long Cruise with a Kerosene Motor

Some unusual power features are attached to the houseboat Pollywog's cruise to Florida this last winter. The Pollywog is owned by Carlyle Ellis, of New York, and is 45 feet long, with a beam of 14 feet. Its registered tonnage is 19, and its draft about 2 feet 6 inches. In this rather bulky boat, with its "five rooms and bath," was installed a single-cylinder, 10-horsepower Remington kerosene engine, and under this power, with very little help from a small spread of sail, she made the run to Daytona, Fla., in the dead of winter.

The voyage began December 1 from Stamford, Conn., after only a two hours' trial run with the newly-installed engine. The cruise was spread over three months, but the number of days on which traveling was done only fifty-two, the shortest run being 5 miles and the longest 70, an average of 28½ miles. The total distance traveled was 1,400 miles, with a total fuel consumption of 300 gallons, at an average price of 10 cents. Total cost of fuel, $30; lowest price paid for kerosene oil, 8 cents per gallon; highest, 12 cents per gallon; total consumption of lubricant 20 gallons, at 40 cents per gallon. The chief delays were on the outside run from Beaufort, N. C., to Georgetown, S. C., which had to be made in a stormy January. Here the obviously low power for the bulk of the boat made travel unwise in unsettled weather, not so much on open water as in the surf in the inlets, where a greater speed than her unvarying 5 miles an hour would have been valuable.

In the Pollywog's log of her cruise the generally familiar "engine troubles" is almost entirely missing. It shows that twice in the three months single bearings grew so hot that stops were made as the quickest way to put them right. Once the engine stopped on account of a stopped feed, a matter that was rectified in 15 minutes, but not once did it fail to start on the first turn, and not a single day's travel was lost for lack of ready power.

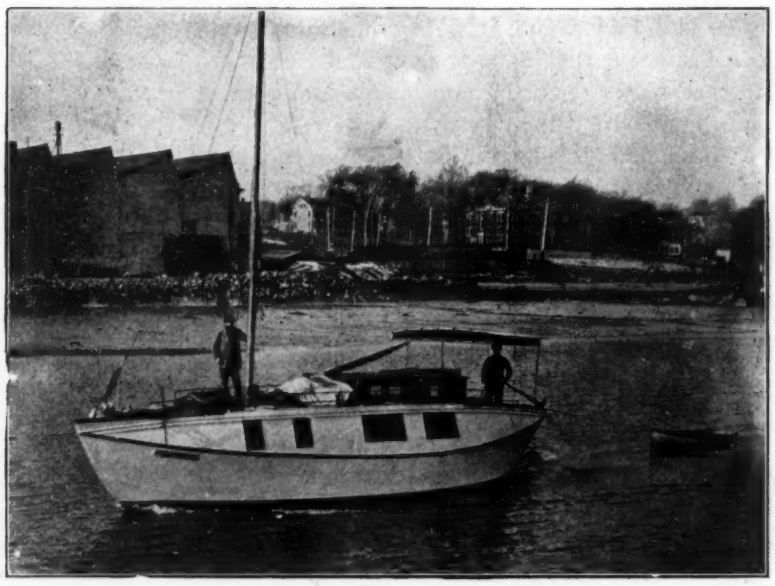
Three other advantages of the installation are well worth mention. There was but slight vibration, the result of light equipment and heavy bedding. There was also the element of safety from the entire absence of gasolene. It being mid-winter, fires were needed for warmth on occasion even as far as Florida, and an open fireplace, burning pine logs or soft coal, is one of Pollywog's proudest possessions. It and the galley range were seldom allowed to go out.

The stock of objections to kerosene engines all failed to hold on this cruise except one. It took the preliminary five or six minutes of heating up before the engine could be started. This was therefore allowed for. The torch was lighted so much in advance. But the assurance that once heated the engine would start and go; that there were no batteries to wear out, no wires to get loose, no mixture to be juggled, was more than ample compensation.

Some New Sterling Fliers

Chicago has another devotee that has been added to "the worshipers of speed" in the person of S. J. Walker, Jr. Mr. Walker has laid bare his ambitions to Apel, of Atlantic City, who has contracted to build a 20-foot hydroplane and equip it with a six-cylinder Sterling engine, 45-75 horsepower. Early delivery is to be made, and it will be interesting to get the results of the trial of this new addition to the speed boat family.

A. G. Miles, owner of the speedy little P. D. Q. II, winner of last season's Gold Challenge Cup on the St. Lawrence River, is busily at work on his new 36-foot hydroplane. He expects to have it completed with the first starting gun of the summer. Mr. Miles designed the new boat himself, and is having it constructed under his personal supervision. One of the eight-cylinder, 150-180-horsepower Sterling racing engines will power it. This outfit, if it proves speedy enough, may be entered in the elimination trials for the American team of cup defenders.



Pollywog, a 45-foot houseboat equipped with a 10 horsepower Remington kerosene engine, which cruised from New York to Florida last winter.

An Able Little Dinghy

The eternal dinghy question is always confronting the owners of those yachts where it is not desirable to carry a dinghy swung at davits, and it is necessary to either tow the refractory brute astern or haul it up in the cockpit or on deck, where it is forever in the way. At this time of the year boat owners start on a hunt for good small boats, and they are usually scarcer than the proverbial hen's teeth. Therefore, the little skiff tender built by George L. Chaisson, of Swampscott, Mass., will fill a long-felt want for the owner of all boats under 50 feet in length.

These boats can be made in all sizes from 9 feet up, either lap strake or carvel built. They are of excellent design, will tow easily, ride any sea, and have great carrying capacity. With oak frames, cedar planking, mahogany top strake and seats they make a very attractive little boat, and one that the owner can take alongside of any float with a feeling of pride. The price is moderate, so much per running foot, and all those who are in the market for a dinghy will do well to communicate with the builders.

For Solving the Fuel Problem

With the price of gasolene averaging 25 cents a gallon, practically every power boat owner is turning his attention to the possible use of some other fuel that will reduce the cost of operation. Therefore the oil gas producer which has recently been placed on the market by the Jacobson Gas Engine Company, Saratoga Springs, N. Y., especially for use on power boats, pleasure craft and work boats, will prove worthy of their careful consideration.

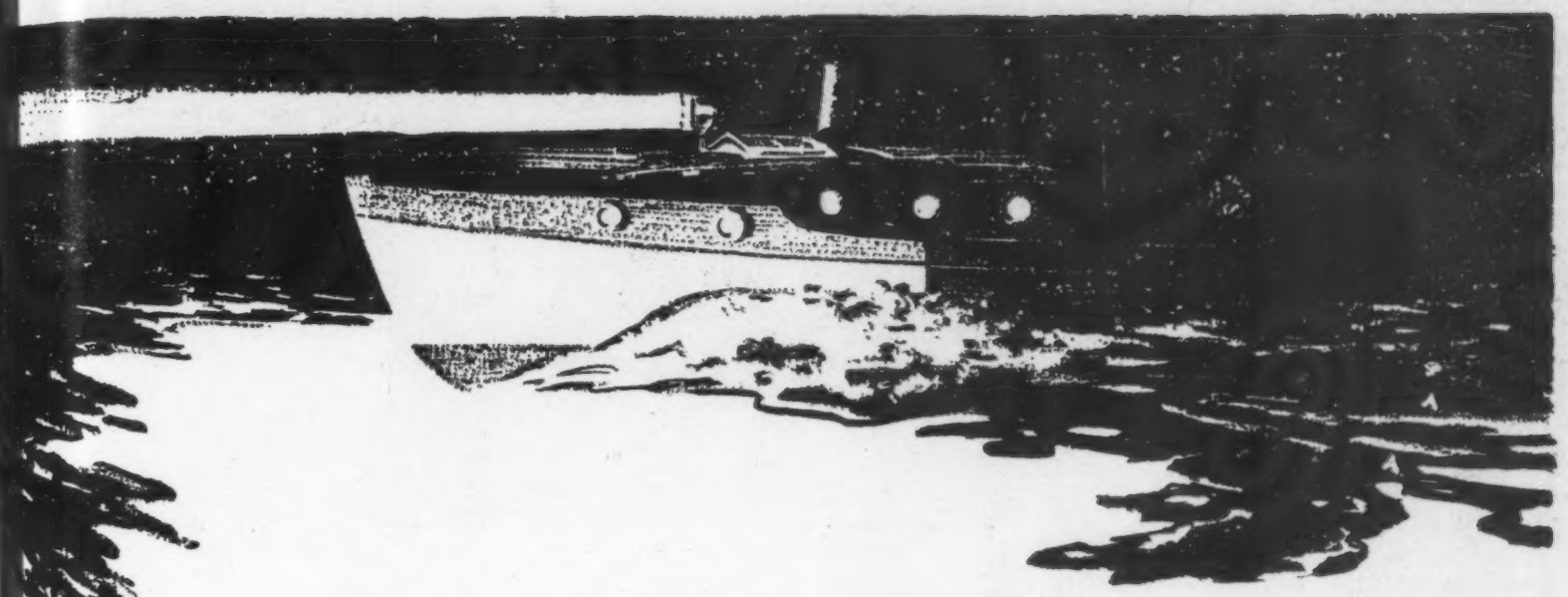
This gas producer is an attachment for burning the less refined, non-explosive fuels, such as kerosene, distillate, gas oil or alcohol. It is a well-known fact that kerosene will produce about 15 per cent more heat units than gasolene, and when well gasified has more efficiency, gallon for gallon, than gasolene. One of the troubles heretofore in the use of kerosene has been that engines had to be built either to use this fuel exclusively or the the attachments for gasifying the liquid had not been perfected. In the Jacobson oil gas producer, however, all of these difficulties have been over-

Type B, Jacobson Oil Gas Producer for burning kerosene, distillate and less refined fuels.

come, and after exhaustive tests and in actual use it has proved its value and can show an economy in the operation of an engine using kerosene for fuel instead of gasolene of anywhere from 40 to 90 per cent, depending on the kind and cost of the fuel, which varies in different localities.

The Type B oil producer is attached to the exhaust manifold between the engine and the exhaust line, with pipes carrying the heated air and gasolene at the proper vaporizing point to the air and fuel in-take of the carburetor, which eliminates the necessity of a special carburetor. The producer can also be built in place of the exhaust manifold, and in this way a great deal of space can be saved, and the company is prepared to make prices for special designs when the number of producers are large enough to warrant.

The engine is started in the ordinary way, and when running a few minutes the kerosene is turned on and the gasolene off. When installing



Your motor boat will give you ten times more pleasure this summer if you arrange at once to have it equipped with the complete

Aplco Electric Lighting System

You don't want to light your boat with gas and oil lamps; it's one of those added risks that need no longer be taken.

The Aplco system gives you the finest kind of a search-light that is scientifically built to project a fog-piercing ray; running lamps of heavy brass that comply with government regulations in every way, and they have no ventilators to let in water; bow and riding lights of the same high quality; dome lamps and brackets for your cabin, and an extension hand-lamp.

The system is built and designed by Vincent G. Apple, who first devised electric lighting for motor cars in 1907. It is built with the utmost exactness and care in the Apple plant; each system is composed of four parts—a dynamo, driven by the boat's engine, a storage battery, an automatic cut-out, a zero center ammeter or a volt meter and ammeter, the last three items being embodied in the switchboard of the B-2 and B-3 systems.

Find Out About
"The Right Way
to
Light the Way"

Think of the reliability, the complete feeling of confidence such a method of lighting insures for your night riding this season. Our book in regard to the Aplco System is just what you'll want now; send for it in plenty of time to get ready. It gives you the exact detail and information of what you'll want for your boat; how it works; how it never fails.

The Apple Electric Co.
82 Canal St.
DAYTON, OHIO

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.

the gasolene tank is used for fuel oil and a small tank for use of gasolene in starting is necessary. The producer takes up very little room, the approximate dimensions for a 20-horsepower engine being but 6 inches in diameter by 17 inches in length, and the price is such that the economy effected in fuel gas in a very few weeks' running will more than make up for the cost of the producer. Further information and prices, sizes, etc., may be had by writing the Jacobson Gas Engine Company, Saratoga Springs, N. Y.

The "Neversink" Life Preserver Coat

The American Life-Saving Garment Company, of Exchange Building, Boston, is manufacturing a coat which is to all intents and purposes an ordinary coat, and yet one in which it is absolutely impossible to sink. The Neversink coat is light, easy and comfortable, and does not in any way impede the movements of the wearer. It is made in different shades of khaki, blue serge or waterproof Fabrikoid leather, and is lined with a special fibrous material, which is as light and soft as down, but which has four times the buoyancy of cork.

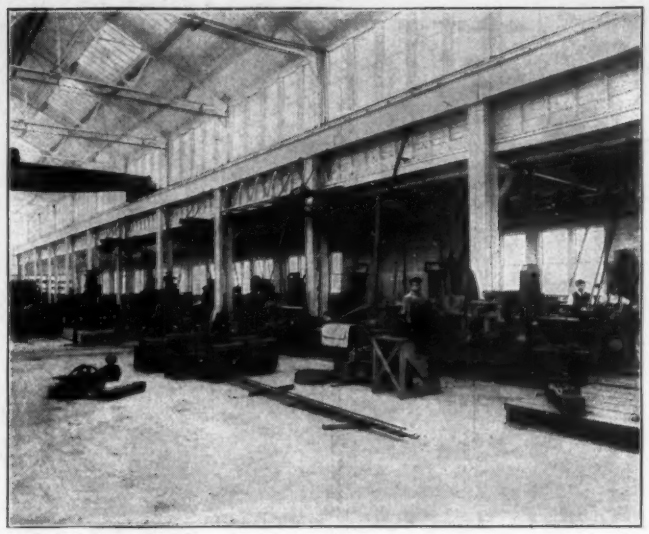
In exhaustive tests the Neversink coat sustained a lead weight of 21 pounds in fresh water for six days and nights, which, in view of the fact that a man weighs approximately 2½ pounds in water, clearly demonstrates the wonderful buoyancy of these garments. This coat is proving of great interest to all lovers of the water, coming as it does at a time when the speed craze has so added to the chances of taking an involuntary bath.

The superiority of the Neversink coat over the old-style life preserver is obvious. When an accident happens there is no time to look around for a life preserver, which, if on board, is probably stowed away in an inaccessible locker. Owing to their lightness, these coats take the place of an ordinary coat, and can be worn constantly while on the water.

A Visit to the Winton Marine Engine Plant

The visitor to the plant of the Winton Gas Engine & Manufacturing Company will receive three different impressions before he has been five minutes past the front door. He will realize that when Mr. Winton turned his attention to the construction of marine engines that this move on the part of the builder of motor cars is going to result in a newer and bigger development of this field of industry; he will realize that he is looking at a motor boat engine of a size and character that he did not know existed; that he is in a plant of the most extraordinary efficiency—modern in every detail of its equipment.

Most followers of motor boat affairs know that after many unsuccessful efforts to find an engine that was exactly right for his splendid new 150-

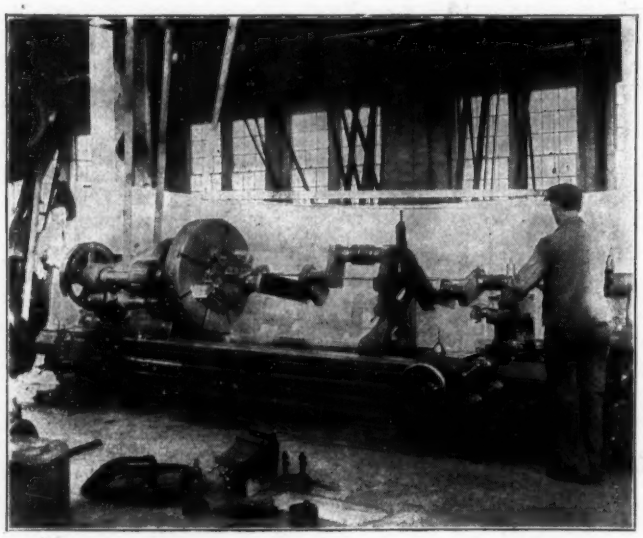


Boring cylinder on small mill at Winton Plant.

foot power yacht La Belle, Mr. Winton decided that it would be necessary for him to build this motor himself. This was the beginning of his marine engine activities. Ever since the conception of the automobile industry Mr. Winton's experimental work has been continuous, covering various turbine, two-cycle, four-cycle revolving and reciprocating motors, ranging from single cylinders to eight cylinders in a unit, and utilizing practically every available hydrocarbon fuel. It was only natural that the man who manufactured and sold the first practical automobile, and who has been at the front of motoring progress ever since, should prefer to create his own marine engine when it became a question of producing something that would suit his exact requirements.

His first marine engines were finished in 1905. Continued and careful experiment with a view to development has been going on ever since. An inspection of the plant is a revelation in factory operation, and cannot help impressing any visitor with the fact that he is in the presence of big things done in a big way. It will give him a new viewpoint on modern marine motor manufacture.

The building is located at 2116 West 106th Street, and is of the most modern type with the very latest ideas of lighting and of power equipment. There are about 24,000 square feet of floor space, which is practically all work room. Naturally special machinery and tool equipment had to be designed and constructed to order for this big plant, as no stock equipment could be had to build such motors as comprise the Winton line. No one could fail to notice the scientifically perfected character of every machine that has been installed in the factory, nor overlook the fact that the entire plant was laid out with due consideration to proper economy in handling such unusual manufacturing problems.



Finishing 4½-inch shaft at Winton factory. 960-lb. Crome Vanadium

The spirit of the employees of the Winton plant is as individual and interesting as the plant itself. It is easy to see that the men who are working at these machines are no ordinary mechanics; each one of them is a master in his own line, chosen carefully after the most exhaustive study of his ability by those in charge. Before a man can hold a job for a minute in the Winton plant he must have proved his ability to Mr. Winton's assistants and to Mr. Winton himself. The standards maintained by the Winton Company are so great an asset that they are unwilling to risk the execution of the smallest detail to any one whose abilities are not of the highest order.

The Winton marine motors are chrome vanadium steel motors. This material, heat-treated and of a[n] proportions, is found in all the w[or]ing parts which are subjected to h[eavy] working strains. In the design these engines all manifolds, pip[es] and fittings that are usually found marine motors have been elimina[ted] and all the working parts have b[een] enclosed, yet can be inspected im[me]diately. The fly-wheel is rem[oved] from the front of the motor a[nd] housed in the after end, where it a[b]sorbs the strain from the prope[ller] and shafting. The position of t[he] wheel also eliminates the elemen[t of] danger to the operator.

The ample proportions of the w[or]ing parts, together with the weigh[t of] the motor, located where it should to take the jar and explosive str[ain] eliminate vibration. These are f[ea]tures that are of interest to the mo[re] wise public, who demand smo[ot]h quiet-running motors. Cylinders a[nd] pistons are the very best close-grai[ned] cast iron obtainable, heat-treat[ed] even the small gears and pinions are hardened a[nd] tempered in oil and are of a high-grade steel.

The Gray Boat Builder's Catalogue

Something new in the way of catalogues h[as] recently been issued by the Gray Motor Compa[ny] 5308 Gray Motor Building, Detroit, Mich. T[his] is not a catalogue of engines nor is it a catalo[gue] of boats built by the Gray Motor Company; t[he] this company does not build boats, but specializ[es] on the manufacture of marine motors.

Realizing, however, that there are many pl[aces] in this country, such as the numerous inland l[akes] and rivers, where the motor boat is not be[ing] used as it should, owing to the fact that there[is] no nearby boat builders to supply the demand, t[he] Gray Motor Company have gathered together in this catalogue data concerning the product[s] various boat building companies in different p[arts] of the United States, so that the prospective p[ur]chaser may see at a glance just what he can ge[t] the way of a craft for the amount of money h[e] wants to spend. These boats are fully descri[bed] as to model, construction, capabilities, etc., w[ith] the price of the boat equipped with the G[ray] motor most suitable to its size and type, or w[ith] the price of the knock-down frames, so that a[ny] boat can be built at home, if desired.

The book embraces all sizes of boats that a[re] built to stock, and includes such types as t[he] small runabout, V-bottom express boats, s[ea]planes, hydroplanes, power cruisers, fishing boats, t[en]der launches and tunnel-stern craft, so that one c[an] pick out the type of boat best suited to the wa[ter] of any particular locality. The Gray Company in putting out this catalogue are acting in an a[d]visory capacity, looking towards obtaining the best results for the users of Gray engines and t[o] those who want to buy a boat for the first time.

For the Ship's Galley

There seems to be a tendency on the part of small boat yachtmen to break away from the use of the small kerosene or alcohol vapor stove, especially where any outside cruising is to be done, owing to the fact that the best of the kerosene stoves are hard to manage in a seaway and usually succeed in smelling up the cabin and bad weather conditions to an extent that will make the most hardened seasick. They are swinging back to the good old-fashioned coal range which can be depended upon at all times, and which can not only cook a meal as well as can be prepared at home, but in which baking can be done perfectly. The Thatcher Furnace Company of New York, have recently placed on the market a small ship range, named the Mascot, made in sizes suitable for small boat and yacht use. They come from the smallest single-oven size, with two lids, to the largest double-oven range suitable for large yachts or vessels. The smallest size is 19 inches wide by 13½ deep and 23¼ inches high over all, so that one does not have to have a large sized galley to enjoy the pleasures of a coal stove.

Thousands of Lives are Lost EACH YEAR THROUGH DROWNING

And in every instance the cumbersome, old style life preserver has been found wanting. It was either not to be found or there was no knowledge of how to put it on. The "Neversink" Coat is always on, and when an accident happens and you are thrown into the water, you are wearing a coat in which it is absolutely impossible to drown. **It is used by the U. S. Naval Aviators.**

THE "NEVERSINK" COAT

is the most remarkable garment ever manufactured. It is a real Norfolk Jacket, light, easy and comfortable, which fulfills every requirement of the ordinary coat. You can work, row or hunt in it as well as in any other coat, but **YOU CANNOT DROWN.**

The "Neversink" Coat is made of khaki and lined with a special fibrous material as soft and pliable as down, which has four times the buoyancy of cork.

THE "NEVERSINK" COAT Provides Absolute Protection Against Drowning.

In exhaustive tests the "Neversink" Coat sustained 21 pounds in fresh water for six days. In view of the fact that a man or woman only weighs approximately 2½ pounds in the water, you can readily appreciate the wonderful buoyancy of these garments.

C. N. Mankowski, owner and helmsman of "Ankle Deep," wearing "Neversink" Waistcoat, 2 lbs.

TESTIMONIAL

WRIGHT & DITSON, 344 Washington Street
Boston, Mass., July 11, 1912

AMERICAN LIFE-SAVING GARMENT CO.
53 State St., Boston, Mass.

GENTLEMEN:

I am writing to tell you that without a doubt your coat saved my life last Saturday when my boat sank off Marblehead, Mass., during a squall, and indirectly saved the fellows with me, as it enabled me to get their trousers and shoes off. We were in the water 20 minutes before help came and I, personally, cannot keep above water 10 minutes under the best conditions, so you see the coat came in very nicely. Under the circumstances, I feel that it is my duty to write you this letter.

Yours very truly,
IRVING C. WRIGHT.

W. Van Nostrand, helmsman of "Baby III," wearing old-style life-preserver, 7¼ lbs.

The "Neversink" Waistcoat

possesses the same floating power as the coat, and may be worn under an ordinary coat.

If your dealer does not handle these garments, Write us direct. *Write Today For Illustrated Booklet.*

Our guarantee—Satisfaction absolutely guaranteed or your money back.

THE AMERICAN LIFE-SAVING GARMENT COMPANY, Exchange Building, Boston, Mass.

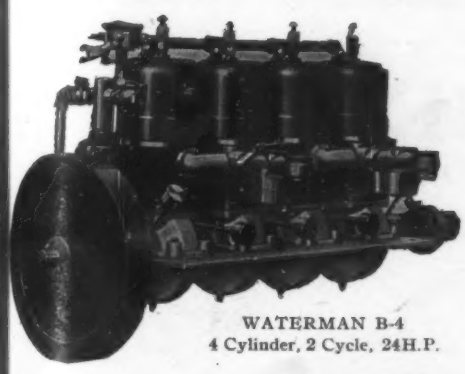
Abercrombie & Fitch, New York, N. Y. Iver-Johnson, Sporting Goods Co., Boston, Mass. John Wanamaker, Philadelphia, Pa. Marshall Field & Co., Chicago, Ill. W. H. Mullins Co., Salem, Ohio Motor Boat & Supply Co., Cleveland, O.

The Original Portable Marine Motor—*Eighth Year*

Better than ever is the new model of the famous "Porto." It gives you the most power for the weight—the most power for the price. Just figure it out. Here's a compact, simple, correctly designed engine, developing ***two h.p.*** (actual brake rating), that weighs only 27½ pounds per h.p. Has 2¾-inch bore and 3-inch stroke. These are the specifications that count.

Because of these facts, the "Porto" drives an 18-foot boat seven miles an hour for four hours on a gallon of gasoline. Results count! The "Porto" has got to make good—every one is ***sold on thirty days' trial.*** It's the original—the motor that made famous this phrase—

Makes a Motor Boat of Any Boat in Five Minutes



WATERMAN B-4
4 Cylinder, 2 Cycle, 24H.P.

There is a Waterman Marine Motor for every purpose—for cruiser or canoe—for business and for pleasure. The fishermen of Norway depend on the Waterman in their strenuous work on the open sea—the motor-boat enthusiast wins races with the Waterman of a different model. They're all high grade, they're all up-to-date—they're all low in cost and high in efficiency. Get acquainted with them.

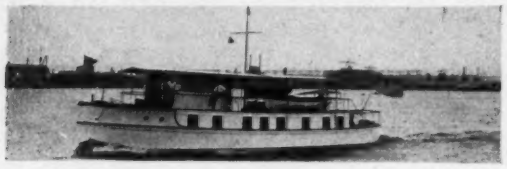
New Catalog waiting for you!
Write us today and we'll mail it Free

WATERMAN MARINE MOTOR CO., 203 Mt. Elliott Avenue, DETROIT, MICH.

The Canadian Fairbanks-Morse Company, Ltd., Montreal, Quebec, and Branches, Distributors for Canada.
Export Office and Show Room, 47 Broadway, New York City

Mathis-built houseboats

The half dozen 70-ft. Mathis-built houseboats just back from Florida have been hailed as the best in houseboat progress to date. But we have on our ways, uncompleted, houseboats between 70 and 80-ft. that set new, better standards. And we have evolved further plans so interesting that no man contemplating a houseboat or cruiser between 60 and 100-ft. should fail to write for details.



70-ft. Lanai—owned by Ex. Com. A. C. James, of the N. .Yacht Club. Designed and built by us. Has 18-ft. liv- room and three large, fine staterooms—every comfort. Draught, 27 inches—goes anywhere.

Mathis Yacht Building Co.

Specialists in 60 to 100-ft. Cruisers and Houseboats

Front and Erie Streets, Camden, N. J.

70-ft. Calabash—designed and built by us for Mr. W. Matheson, New York. During past three months it has creat great interest through the Chesapeake district.

Baldridge Reverse Gear

—the gear that appeals to the careful buyer

¶ It has a main shaft that extends unbroken from bearing to bearing so it *can't* sag and cause bearing troubles.

¶ Its clutch and reverse band are so designed that it "idles" perfectly, takes hold and releases quickly and positively.

¶ It stands overloads far greater than its rated capacity would indicate.

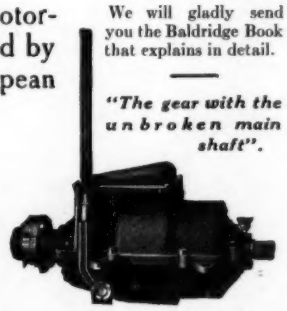
¶ It is fully enclosed—no moving parts to sling oil or catch your clothes.

¶ It is used by thousands of motor-boatmen here and abroad—and by leading American and European engine builders.

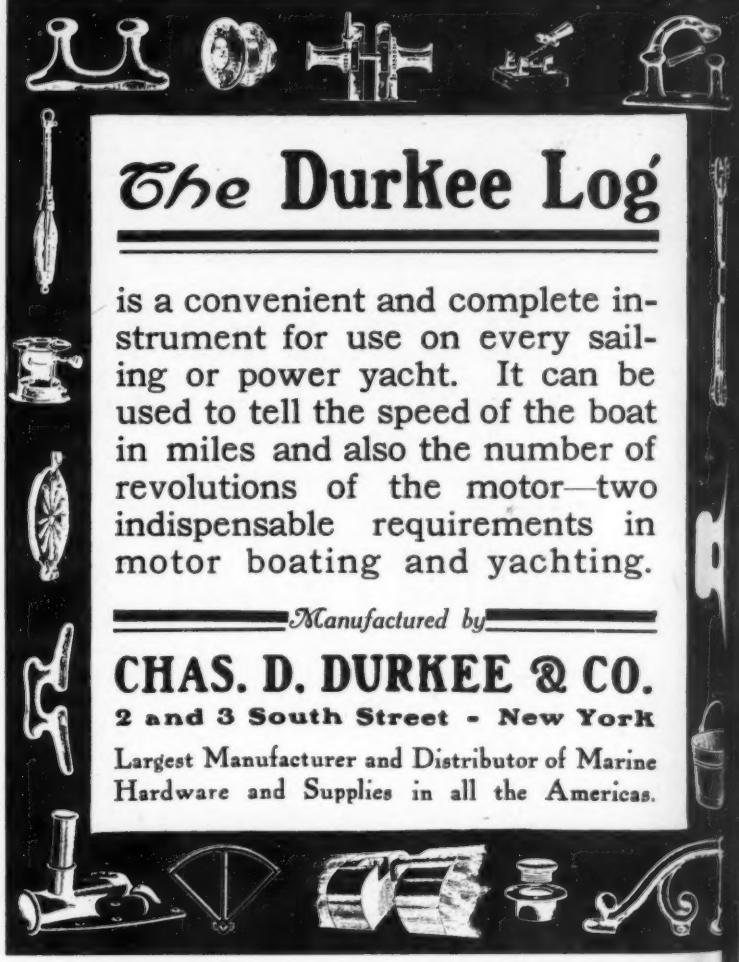
¶ If you are in the boat business, write for dealer's proposition.

We will gladly send you the Baldridge Book that explains in detail.

"The gear with the unbroken main shaft".



The Baldridge Gear Co.
698 W. Grand Boulevard
DETROIT, MICH.
Handled in Canada by The Canadian Fairbanks-Morse Co., Ltd.

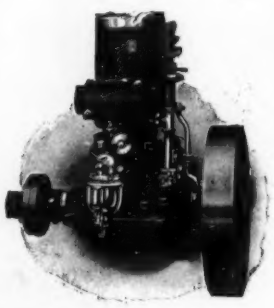


The Durkee Log

is a convenient and complete instrument for use on every sailing or power yacht. It can be used to tell the speed of the boat in miles and also the number of revolutions of the motor—two indispensable requirements in motor boating and yachting.

Manufactured by

CHAS. D. DURKEE & CO.
2 and 3 South Street - New York
Largest Manufacturer and Distributor of Marine Hardware and Supplies in all the Americas.



MIANUS ENGINES

FIFTEENTH YEAR

Guaranteed for Life

RELIABLE STURDY POWERFUL

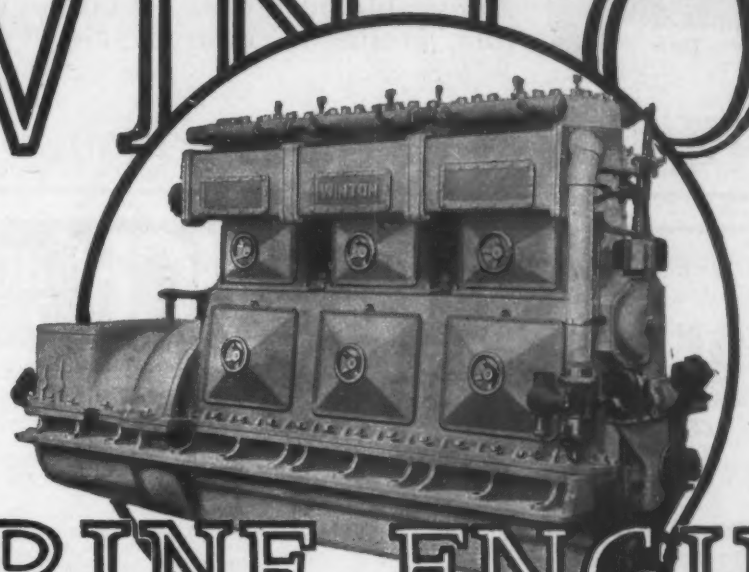
Bulletin 21 describing 1913 Mianus free.

The Mianus Motor Works, Stamford, Conn.

Eleven Branch Stores Give Service to Our Customers

New York: 76 Front St.
St. John, N. B.: 14 North Wharf.
Norfolk, Va.: 215 Main St.
Newark, N. J.: 158 Front St.
Baltimore, Md.: 128 Market Place.
Seattle, Wash.: 80 W. Marion St.
Boston, Mass.: 12 Commercial Wharf
Jacksonville, Fla.: 24 So. Ocean St.
Portland, Me.: 29 Portland Pier.
Providence, R. I.: 144 Dorrance St.
Eastport, Me.: 127 Water St.

WINTON MARINE ENGINES



OUR double-page announcement in the April motor boating magazines has made an impression worthy of the fact itself: that the advent of Alexander Winton into the marine motor field marks an epoch in that industry.

From the letters that have come to us from leading naval architects; from the congratulations of the boat-building fraternity and the motor-boating experts, it has been made very plain to us—as it must be to you—that there can be only one best motor in the "big" class, and that is the Winton Six. We are ready to prove this by any kind of a demonstration.

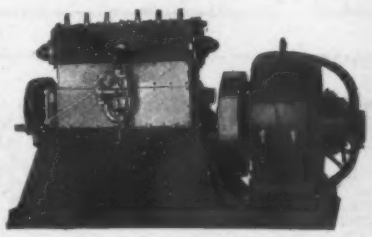
The serious consideration of any other type of motor for large power yachts cannot exist. The naval architect who has been commissioned to design a boat of this character, as well as its prospective owner, is now in a position to figure on a power plant worthy of the largest, finest motor craft that will ever be built along lines of modern luxury and efficiency.

Complete information in regard to the unequaled Winton Six is at the disposal of naval architects and their clients. We would especially urge anyone who requires a power plant of this size and perfection to write to us at once; our sales manager is ready to lay all necessary details before you at your office. Better still, in carrying out plans of such magnitude, both client and architect will find it well worth while to arrange for a visit to this plant. It cannot help being a source of the greatest interest and inspiration.

Prices

Horse Power	60–75	100–125	150–200
Price	$3200	$5000	$6500
No. Cylinders	Six	Six	Six
Bore	6½ in.	8 in.	9 in.
Stroke	9 in.	11 in.	14 in.
Rev. per min.	400–500	350–450	350–425
Weight	5000 lbs.	8000 lbs.	15000 lbs.

We have for immediate delivery 150–200 H. P. engines.



The Winton Small Generator

We consider this the finest balanced, the cleanest and smoothest in appearance, the quietest and best proportioned generator set ever offered.

It consists of a 5 K.W. Crocker-Wheeler generator direct connected to a six cylinder T-head 3x4 motor with the valves entirely enclosed. So thoroughly quiet is its operation that even when working on its full load, the breaker box on the magneto makes more noise than any other working part on the engine. Its governor is so sensitive that it goes from full load to no load with the least possible variation in its speed load. Its oiling system is automatic and when the machine is once started no further attention is required.

We give as much attention to the building of this small engine as we do to our larger sets, and the workmanship of this motor is what makes it so thoroughly quiet and so smooth in its operation. It is furnished complete with magneto, governor, plugs and carburetor, ready to run.

The Winton Gas Engine & Mfg. Co.

2120 West 106th Street, Cleveland, Ohio

Charles Lang, Vallejo, Cal. The Seattle Construction & Dry Dock Co., Seattle, Wash. Taylor & Young, Limited, Vancouver, B. C.

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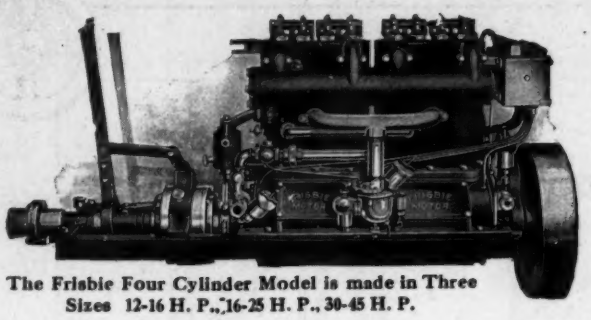

The Frisbie Four Cylinder Model is made in Three Sizes 12-16 H. P., 16-25 H. P., 30-45 H. P.

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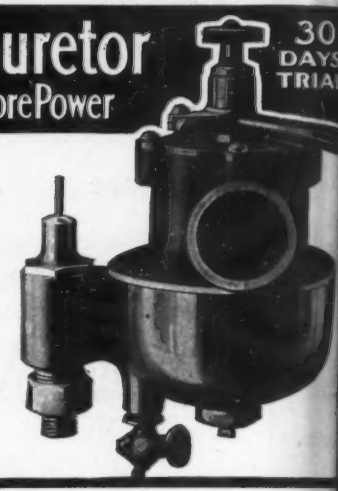

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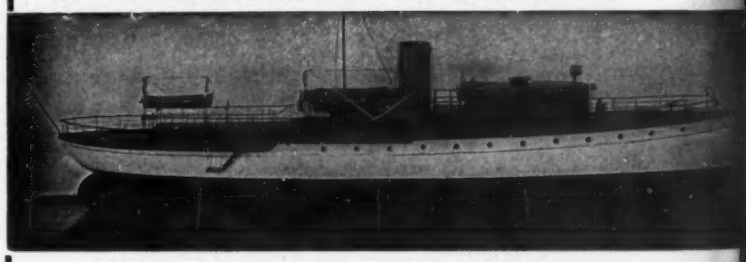

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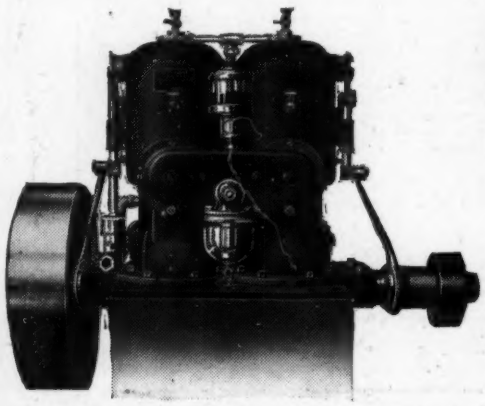

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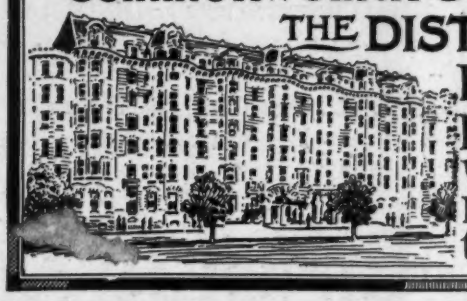

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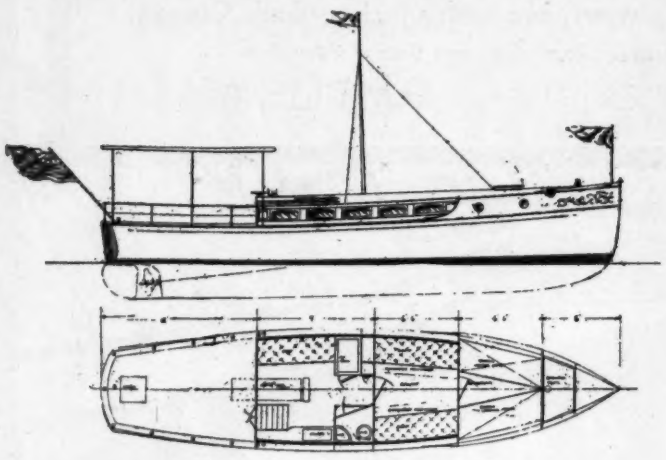

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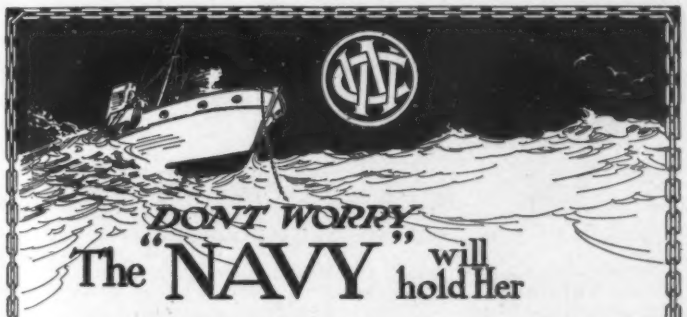

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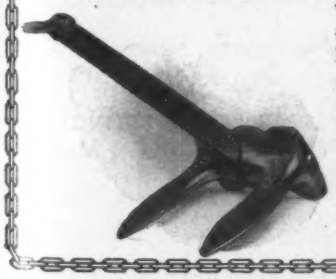

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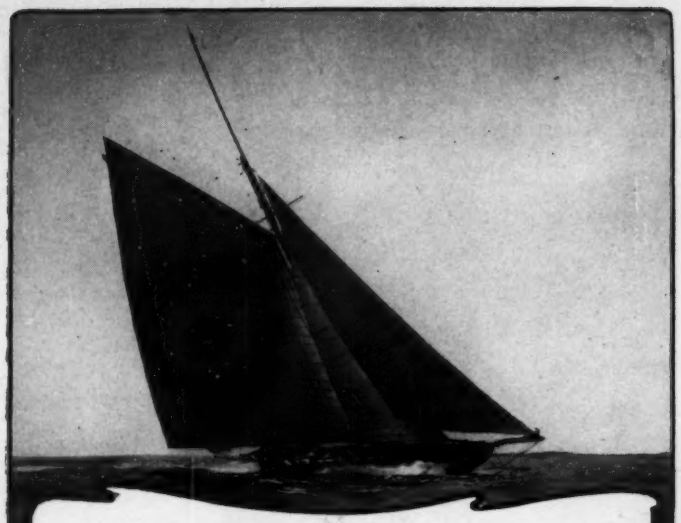

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WILSON & SILSBY, Sailmakers

Rowe's Wharf, Boston, Mass.

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MOSLEM II,	" "
QUAKERESS,	Inter-Club Y.R.A.
CHEVY CHASE,	" "
CURLEW II,	Great So. Bay, L.I.
SALAMANDER,	Inland Lakes, Y.R.A.
CUBANOLA,	" "
KATHRYN II,	" "
CHALLENGER,	San Francisco
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We make sails for everything that floats, from the smallest one-design class to the largest schooner yacht, whether racing or cruising. With our finest combed Egyptian Cotton, especially woven for us by the Lowell Mills, we can guarantee to give our customers something that is absolutely perfect in the way of duck, cut upon the successful "Wilson" principle.

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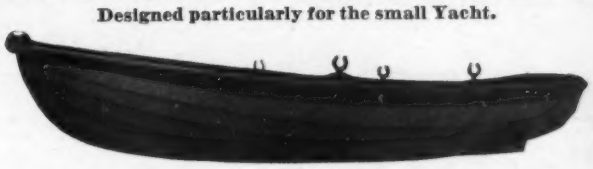

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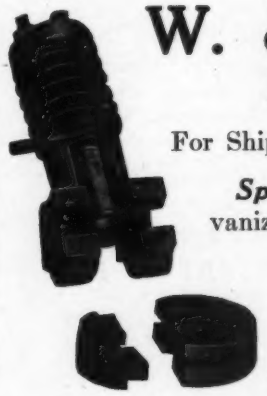

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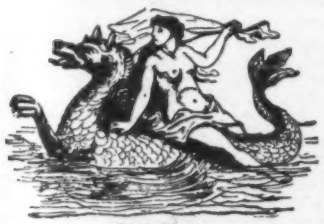

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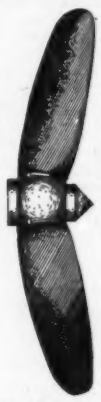

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OUR ANSWER

Various statements have been published within the last few months intended and calculated to injure our reputation. While the matter involved was in court it seemed improper for us to reply to such statements; but now the suit is ended. The defendant has paid us a sum of money in settlement and the injunction has been made permanent by decree of the court, signed April 8, 1913.

The story is told below in the judge's own language, in the preliminary decree.

THE STAMFORD FOUNDRY COMPANY.

UNITED STATES DISTRICT COURT, Southern District of New York.
The Stamford Foundry Co., *vs.* Thatcher Furnace Co.
HAND, District Judge:

In 1910 the complainant terminated the exclusive selling agency of the defendant as it might properly do. Thereafter for eighteen months the defendant continued selling the stoves on the same terms as other local agents. Thereupon, dissat sfied with these arrangements, the defendant began to make a ship stove of the same size, of the same appearance, and for the same special use as the complainant's, merely changing the old and perfectly well-established trade-mark, "Shipmate" to "Messmate." Of course, the imitation is not exact; it never is in such cases. The details of the stove have been varied in trifling regards and the maker's name has been put on the hearth. All that is almost a convention when you appropriate another man's mark, for there must be some color of good faith, some defence to put forward. Minor differences are supposed to help over hard places. Here the words are quite the same in suggestion when applied to the galley stove of a ship. Each means that the stove is the crew's companion; it is fatuous to distinguish between the mess and the ship in this connection. In sound, too, though I should not think that essential, the two are quite near enough to confuse. It is impossible to mistake the defendant's purpose, the very ancient desire to trade on another man's name and reputation. The unctuous disclaimers in the affidavits are an added indication to those familiar, of how true the case is to type.

A writ *pendente lite* will go against any use of "Messmate." The complainant will not care, I assume, to press the point of unfair trade, which is not so clear.

October 24, 1912.

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None Finer Built Anywhere

Are conceded to be equal to the finest in the world. There is no higher expression in the art of boat building than the product of this organization.

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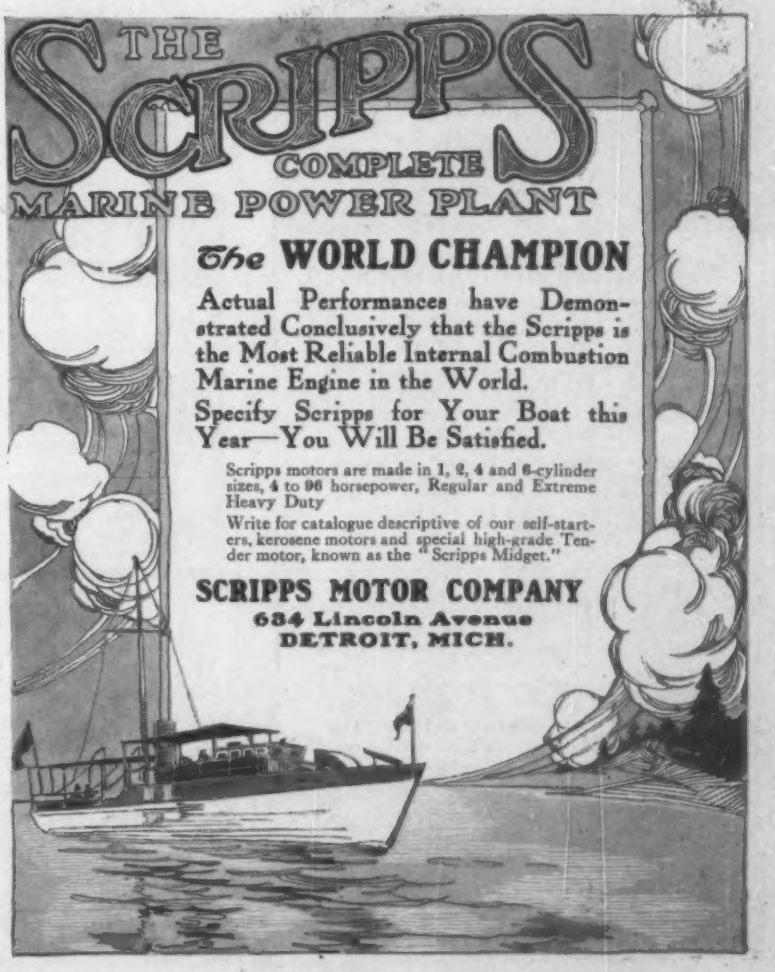
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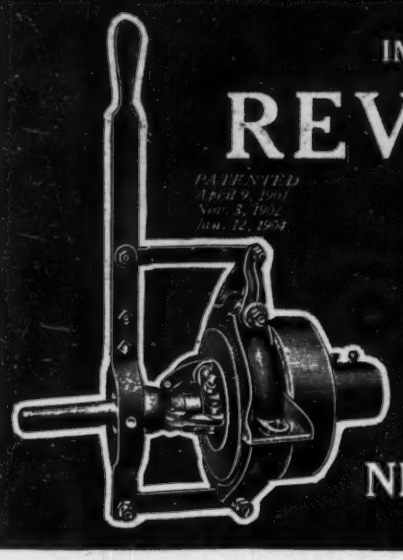

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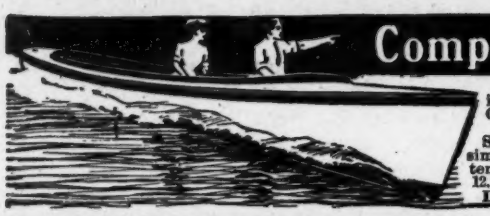

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Those little advertisements appearing on page 322 are well worth reading. That "Monthly News Items" department is a new one which will be quite worth while keeping in touch with.

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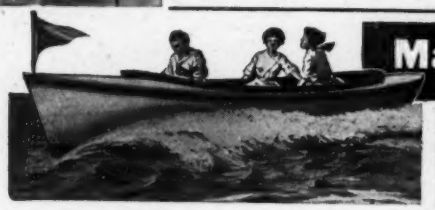

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MICHIGAN STEEL BOAT CO., 1227 **Jefferson Avenue, Detroit, Mich., U. S. A.**

Carrying the Panama-Pacific Exposition Flag Around a Continent

(Continued from page 331.)

the glass at 30:01, soon increased to a gale, a although our sails were reefed they were ba torn, and we did not reach Puerto Montt, t next settlement on the west coast, until the fi of July, with the men constantly at the pum (7,000 strokes per day). We beached her he as soon as I had obtained a permit from t captain of the port, and had necessary repai made. I put the engineer ashore here, as he w of no use in making the engine go; and as no was to be had this side of Corral, some 200 mi north, and with a bad coast before us in the de of winter, and almost constant northerly win the prospect was not a very cheerful one.

After a long delay in Puerto Montt patchi the leak we sailed, or rather towed, with our o power dory of 3 horsepower, as there was wind, to Calbuco on the 20th of July, a distan of some 21 miles, and on the following day sail with a fair wind to Ancud, some 45 miles, and t northern limit of the Chilian Archipelago, beyo which our course again lay in the open sea. Ho we were destined to remain until the season almost constant northerly winds had passed, in one of our attempts to force our way nort ward against a heavy head wind and sea we l the centerboard, which had been giving troub for some time.

Had we had gasolene it would have availed little, as the motor could not have pushed t Edris, with her beam of 20 feet and draft of feet 8 inches, against the prevailing wind and s at this season. At this time but three of my cre of six remained, and it was only by the aid of t port authorities that I compelled one of the t men I had engaged, and who had accepted a lar advance on his wages, to go to the next po where he eventually deserted.

While waiting an opportunity to escape fro the grip of winter I sent to Valparaiso for a engineer and back to Puerto Montt for gasole at champagne prices ($1.00 American money p gallon), so that when the wind should veer to t southward as the season advanced I would b prepared to rush Edris to a port where necessa repairs could be completed; for it would ha been an unwarranted risk to have attempted passage with a vessel in her condition, with pat plates temporarily secured with a single bo which protruded from her bottom, no lifeboat, centerboard, sails in poor condition and shor handed.

Finally, on September 5—one of my goo luck Fridays—we sailed from Ancud, and after strenuous but successful run before the fir southerly wind we had had in weeks, reache Valdivia, where I at once began more permane repairs on the little vessel, which I loved as seaman can regard no other inanimate thin These required two months of work, as the wo is understood in this easy-going land of flowe without fragrance and birds without song.

October the 27th saw us once more in cond tion to resume our voyage, and with the aid of power yacht (as I had no engineer) we towe down the Valdivia River to Corral, where I w to be joined by Capt. Cameron, who was to be t permanent commander of Edris, and upon his a rival immediately put to sea.

With a fair wind though a heavy-running s we made good time, and after calling at Talc huana we arrived at Valparaiso, November 2 without a mishap and in good shape. We we now in the good season, with favoring, I mig say almost constant, fair winds. * * *

At Valparaiso Capt. Mille turned the Edr over to Capt. Cameron, her permanent com mander. She sailed again, December 2, f Callao, Peru, and San Francisco. Capt. Cam eron describes in a letter the latter part of t voyage, as follows:

Left Callao on 19th of December, and sto off shore to get benefit of southeast trades, whi I found very light and well to the south'

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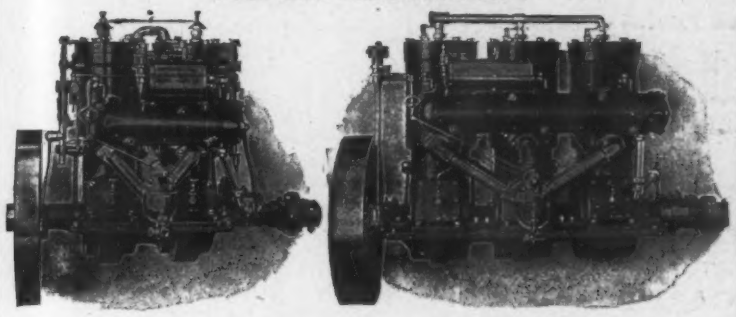

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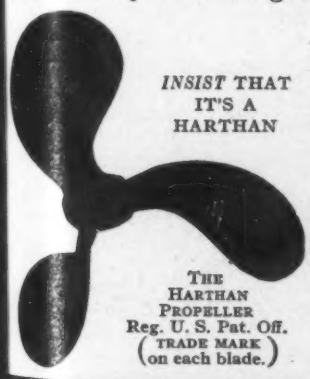

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Crossed line on January 4 in long. 114 degr W. While in lat. 5 degrees N. and long. 116 grees W. encountered tail-end of typhoon; h to under double reefed foresail, which blew completely; then hove-to under storm trysail reefed storm jib—made average weather Wind died suddenly, leaving Edris at mercy o heavy a cross sea as I have ever seen. B tackle carried away; a 50-drum of gasolen deck washed overboard; the big tank of wate deck that was carried through the Straits clean over the davits. I stood on the top of house holding on to the main mast, and quently had the water to my knees. I though was "curtains" for the Edris, sure.

In about an hour we were all right, breezed up a little so that her sails would st her. Found the main mast split the full le Outside of this day encountered good wea throughout the trip. Found the N. E. tr about N. N. E. and force 6 and 7. Carried t to lat. 29 degrees N. and long. 135 degrees On the 9th of February near midnight picked Farallones Light 35 miles outside of San F cisco. Then thick fog shut in. Came to an off Quarantine Dock at 7 P. M. Sunday n Coming in we ran away from the pilot boats the Edris bucked the tide through the Go Gate, something that has not been done by a ing vessel for years. The engine ran fairly after I had rings made in Valparaiso, the lon continuous run being fourteen hours, but couldn't log over six.

Perry (the little Englishman signed at Mo video) was paid off with $165 at 4 P. M., an 6 A. M. next day was minus money and a pair of shoes. J. S. CAMERO

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Spark and throttle control can be carried t wheel also, so that complete control can be ha this point. The wheel governing the rudder also be locked if desired. It is a very com and useful device that should interest all use high-speed boats where complete control is sential. Further information can be had writing Mr. F. Capdevila, 248 West Forty- Street, New York City.

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